APPENDIX B
IDM DELINEATION SURVEYS

Appendix B contains copies of the delineation surveys generated by ION Technology, Inc. during the delineation phase of the remedial action in Building 14. These survey forms contain the results of the scan surveys, direct measurements, and smear samples taken during the delineation of each area. The surveys are presented by area, as outlined below, and then organized numerically within each area.

The sequence in which the delineation surveys are listed is:

1. Areas 2 and 3
2. Area 4
3. Large Hallway
4. First Floor Offices and Small Hallway
5. Second Floor
6. Areas 8, 10, and 11
7. Corridor
8. Area 9
9. Areas 12 and 13
10. Area 14 North
11. Area 14 South
12. Area 15
13. Area 20A West
14. Area 21

APPENDIX B

IDM Delineation Surveys

APPENDIX B-1

DELINEATION SURVEYS FOR AREAS 2 AND 3

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

SURVEY # 029

SAMPLE DATE: 3/5/97
LOCATION: AREA 2 & 3
PRAXAIR SITE
BLDG. # 14

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	50 COUNTS
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE # Location	~~LOCATION CODE~~ CPM BY	LOCATION DESCRIPTION	~~GROSS SAMPLE COUNTS~~
1	320	@ BOTTOM OWALL UNDER MOLDING	SEE MAP
2	410	UP TO 4" FROM FL.	
3	1500		
4	343		
5	309		
6	168		
7	1718		
8	420		
9	180-250	HORIZONTAL ON WALL 5' FROM FL.	
10	721	" " 4' FROM FL.	
11	200-320	ON PIPE INSULATION	
12	439	@ FLOOR UNDER TILE	
13	1105		
14	927		
15		AREA 2 OVER HEAD SUSPENDED CEILING	
16		~~84~~ @ * SEE BELOW	
17			
18			
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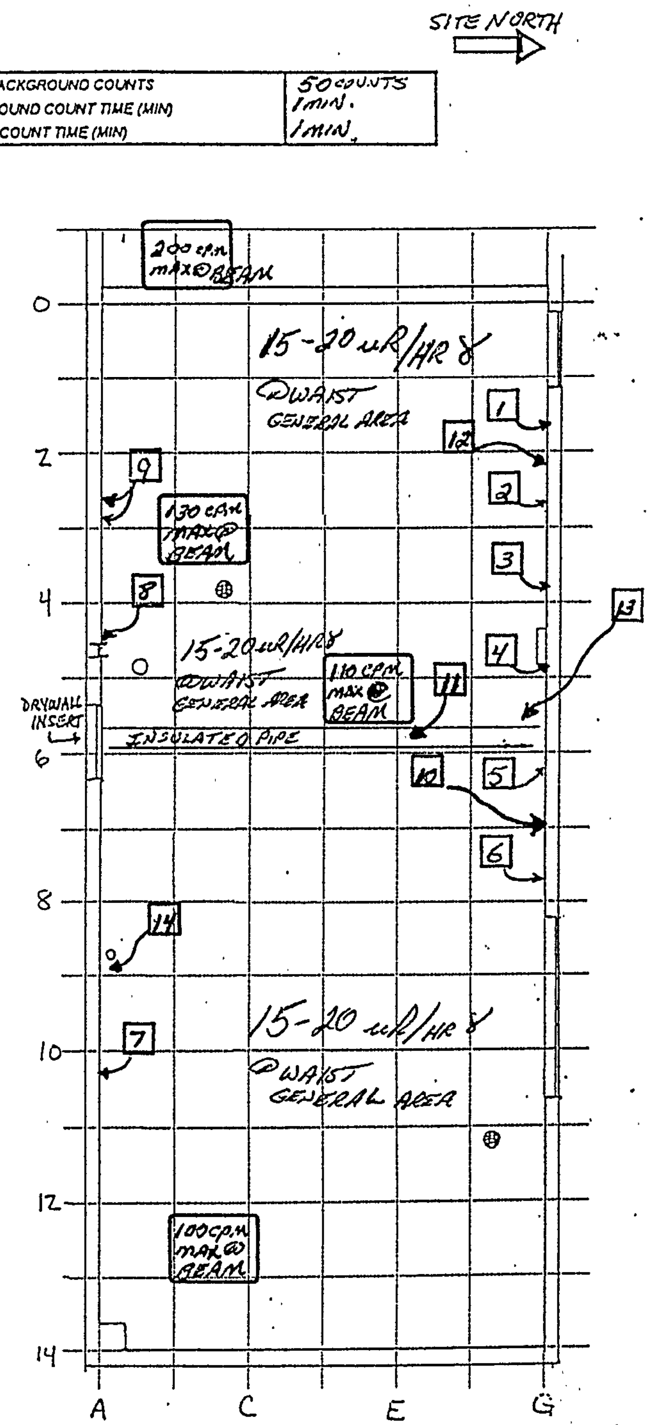
(Samples 1–14 bracketed: "...EATION")

OVER HEAD HANGING TILES
* 84 SQUARE METERS IN AREAS 2 & 3, ALONG WITH TRACKING OF SUSPENDED CEILING, SURVEYED - DIRECT PROBE & SMEARS, NO DETECTABLE ACTIVITY @ ANY SURFACE OF ALL MATERIAL FROM SUSPENDED CEILING.



Instrument Model & s/n:	2221 # 89648 (INST C)
Detector Model & s/n:	
Calibration Date:	12/27/97
Efficiency	cpm / dpm based on S/Y90 = .21 EFF.
Detector Area	cm2 = 15.5

BUILDING 14 AREAS 2 & 3
⊕ = FLOOR DRAIN
O = PIPE / CONDUIT PENETRATION
[#] = DIRECT PROBE READING (1 MIN. COUNT) βγ
[ ] = AREA OF OVERHEAD SURVEYED

[signature] 3/6/97

ENCL-C2.XLS

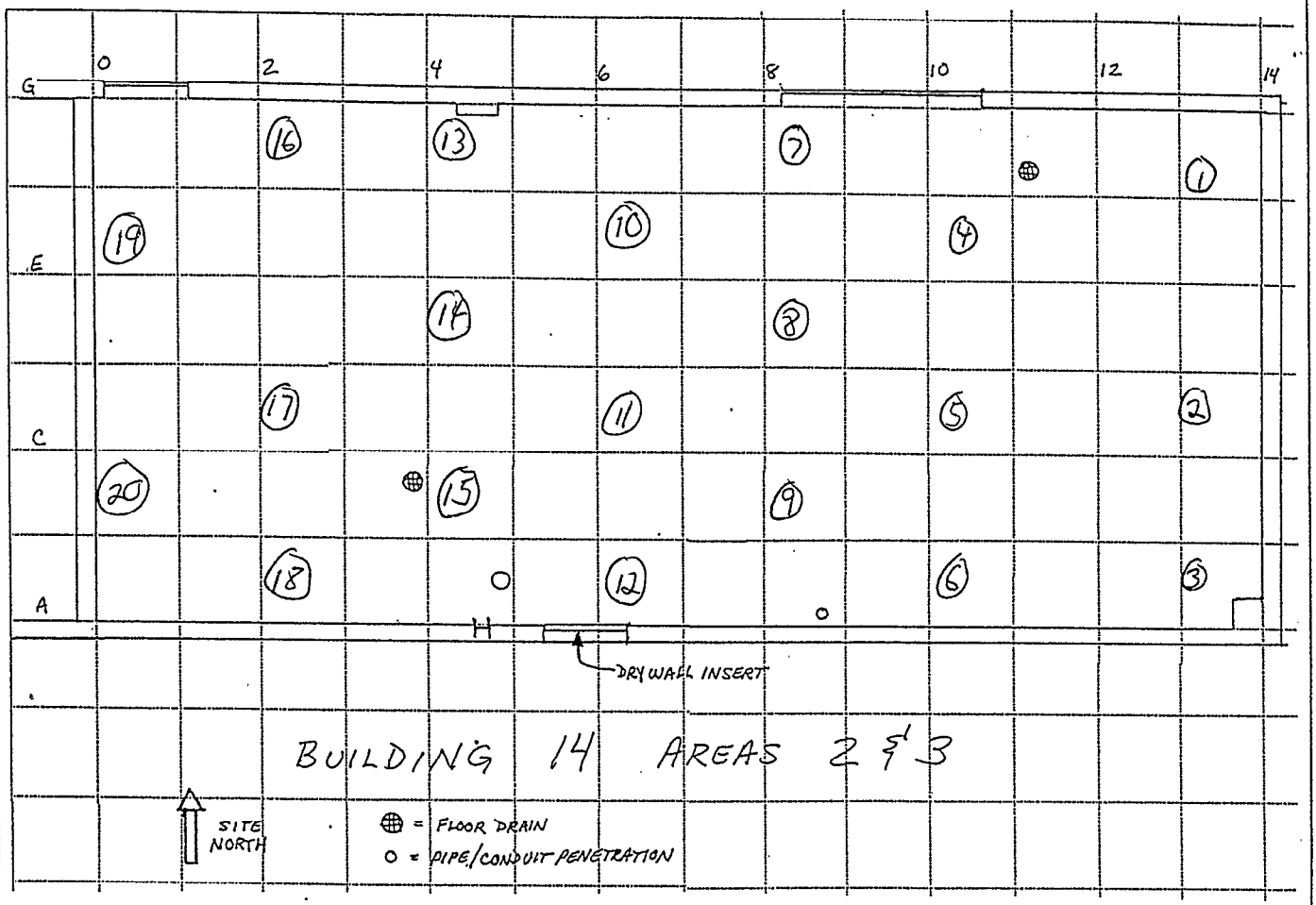
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 3-6-97 1500	Tech JCKE	Instruments / sn (I) 2929 * 91234
Location / Purpose PRAXAIR SITE BLDG. # 14.		Survey # 043 RWP # 01
AREA'S 2 & 3 FLOOR - POST TILE REMOVAL		



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	SEE MAP	0	0	68	7	8	S	SEE MAP	0	0	~~37~~	< Bkgd
2			1	3	52	< Bkgd	9			0	0	68	7
3			0	0	52	< Bkgd	10			2	5	63	< Bkgd
4			0	0	62	< Bkgd	11			0	0	64	< Bkgd
5			1	3	53	< Bkgd	12			1	~~6~~ 3	67	3
6			2	5	54	< Bkgd	13			3	8	51	< Bkgd
7			0	0	56	< Bkgd	14			4	11	69	10

Comments:

		BKD	EFF	MDA
Scaler S/N (D) 2929 * 91234				
CT = 1 MIN.	Alpha:	141/100	.34	14
Tech P. Marr	Beta:	46074/100	.30	135

Review

ION TECHNOLOGY, INC.

Bldg. 14, Praxair Site

RADIOLOGICAL SURVEY CONTINUATION FORM

Date / Time: 3-6-97 1500	Tech.: TM 3190	Instruments/sn: E 2929 * 91234
Location / Purpose: PRAXAIR SITE BLDG. #14 AREA'S 2 & 3		Survey No.: 043 RWP No.: 01
FLOOR - POST TILE REMOVAL		

Loc.	Type	Description	Gross	α DPM	Gross	β DPM
5	S		1	3	59	<Bkgd
6	↕		0	0	64	<Bkgd
7	↕		0	0	59	<Bkgd
8	↕		3	8	53	<Bkgd
9	↕		1	3	56	<Bkgd
10	↓		2	5	76	33
		N				
		A				

Loc.	Type	Description	Gross	α DPM	Gross	β DPM
		N				
		A				

Comments:

REVIEW

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-6-97
LOCATION: Room 2&3 FLOOR SURVEY BLD. 14, AFTER FLOOR TILE REMOVAL.
Survey # 070

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

SITE NORTH

TOTAL BACKGROUND COUNTS	60
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	D	SEE GRID MAP	
2		FOR ACTIVITY LOCATIONS.	
3		ALL READINGS ARE	
4		IN GROSS C.P.M. / 15.5	
5		CM² PROBE. B/G.	
6		NOTE: GRID RANGES	
7		BETWEEN NUMBERS.	
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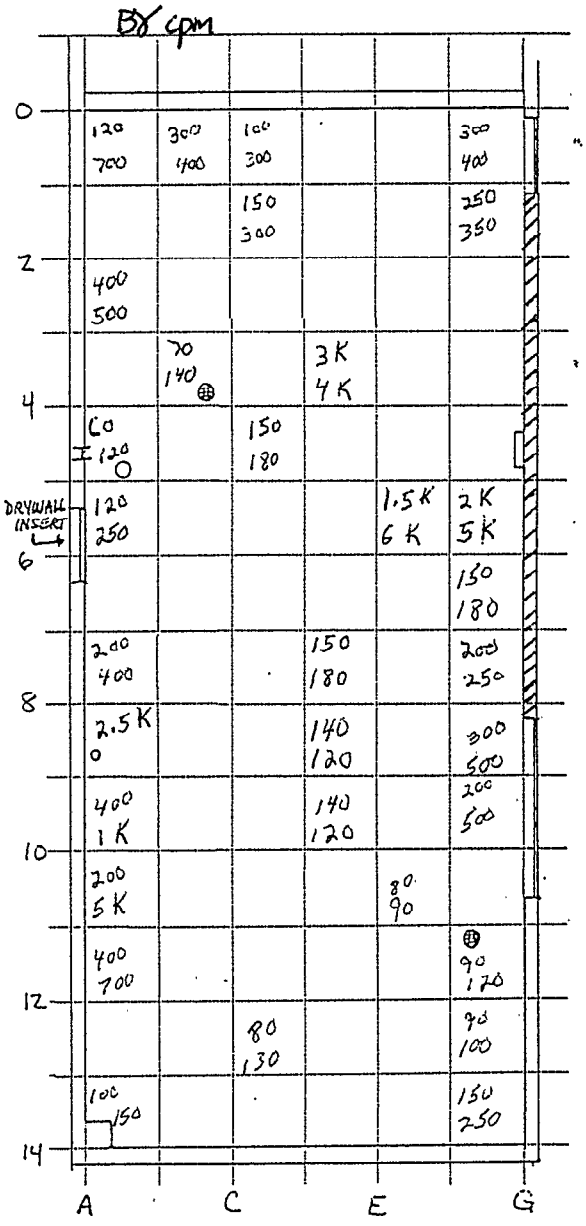

Instrument Model & s/n:	Ludlum 2221 B
Detector Model & s/n:	
Calibration Date:	
Efficiency	15.5 cpm / dpm based on Sr/Y90
Detector Area	cm2

H.P. m. 3/98

BUILDING 14 AREAS 2&3
⊕ = FLOOR DRAIN
O = PIPE/CONDUIT PENETRATION
D = Direct Probe

REVIEW

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT SURVEY # 075

(scaler measurement)

SAMPLE DATE: 3-12-97
LOCATION: **Building 14, Areas 2 & 3**

DELINEATION OF FLOOR AREA

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	SEE BELOW
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

NOTE: # / # = 2X2 NaI cpm / FLOOR MONITOR cpm

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1		SEE GRID MAP	
2			
3		ALL READINGS ARE IN	
4		GROSS CPM USING	
5		2X2 NaI # 43-37 FL. MONITOR	
6		~~Beta~~ DETECTORS.	
7			
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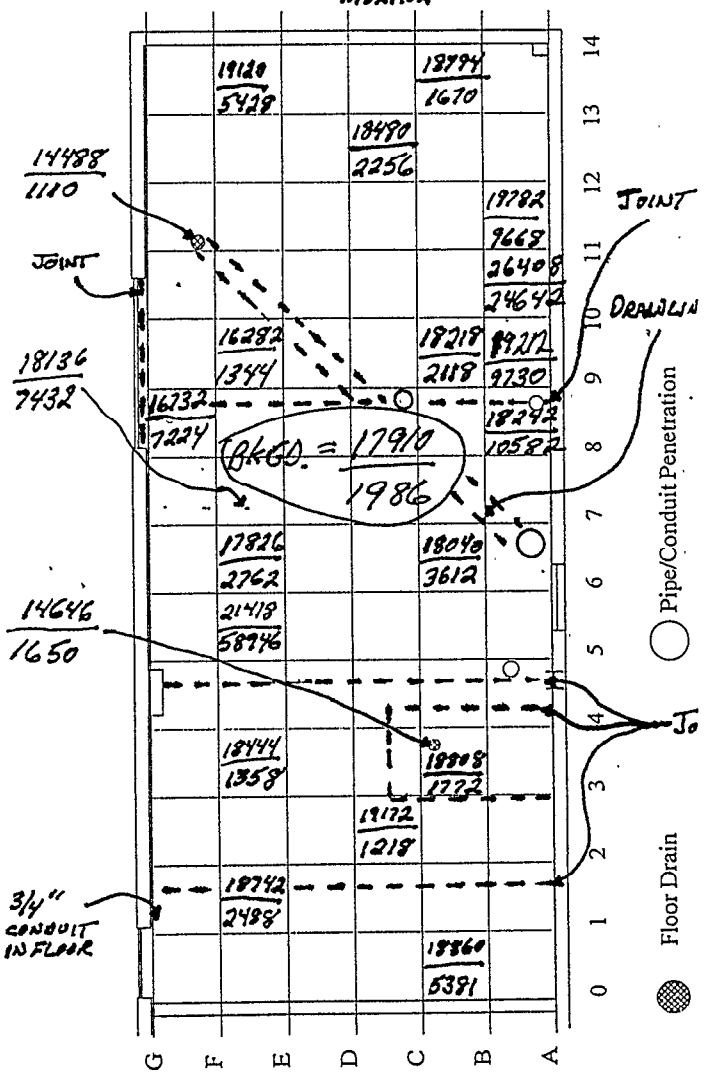


M. 3490

3-12-97

Instrument Model & s/n:	INST. (D) L2221 w/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 425

ALSO INST. (E) L2221 w/44-10 (2X2)

REVIEW

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

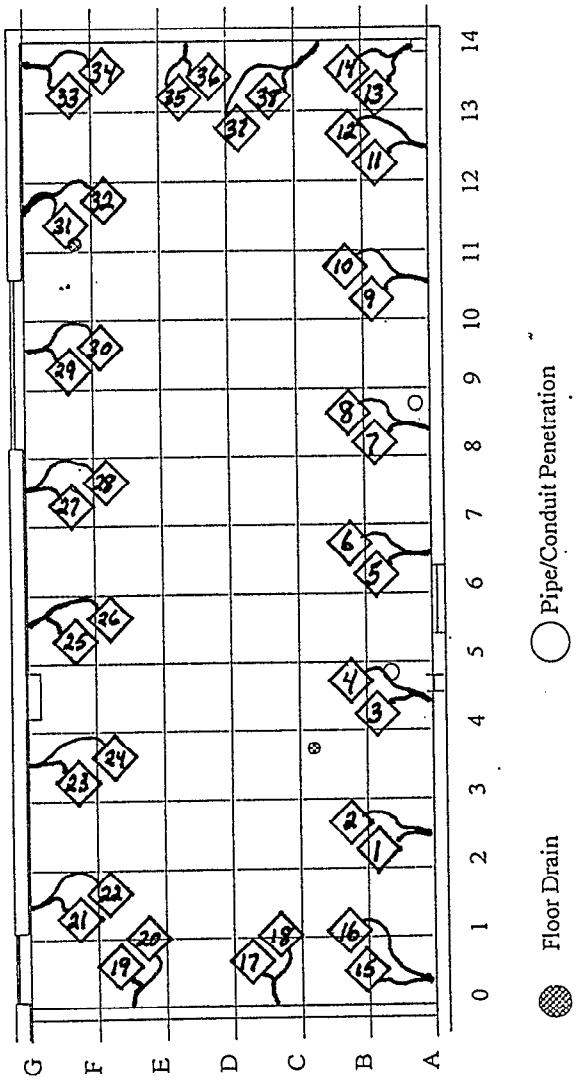
SAMPLE DATE: 3-12-97
LOCATION: Building 14, Areas 2 & 3

DELINEATION SURVEY
1.5' TO 6.5' HIGH ON WALLS
SURVEY # 100

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	1234
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	A2 -AA	SEE GRID MAP	1758
2	A2 -BB		2232
3	A4 -AA		1681
4	A4 -BB		1642
5	A6 -AA		1754
6	A6 -BB		1698
7	A8 -AA		2734
8	A8 -BB		1754
9	A10-AA		1578
10	A10-BB		1570
11	A12-AA		1634
12	A12-BB		1684
13	A13-AA		1536
14	A13-BB		1472
15	A0 -AA		1712
16	A0 -BB		1714
17	C0 -AA		1536
18	C0 -BB		1418
19	E0 -AA		1468
20	E0 -BB		1482
21	G1 -AA		2448
22	G1 -BB		1606
23	G3 -AA		1208
24	G3 -BB		1226
25	G5 -AA		1860
26	G5 -BB		798
27	G7 -AA		2448
28	G7 -BB		2880
29	G9 -AA		616
30	G9 -BB		622
31	B11 -AA		1274
32	B11 -BB		1204
33	C13-AA		1652
34	C13-BB		1200
35	D14-AA		1708
36	D14-BB		1700
37	B14-AA		1924
38	B14-BB		1629
39	___ AA	N/A	N/A
40	___ BB		



William W. Lee
3-12-97

Instrument Model & s/n:	D L2221 W/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20 EFF.
Detector Area	cm2 = 425

REVIEW

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 3-18-97 @ 1100	Tech M. Zigo	Instruments / sn Ludlum 2221 5	Floor Monitor
Location / Purpose Area 2 & 3	floor Delineation	Survey # 138	RWP # N/A
Survey 138		BKD 754	

Building 14, Areas 2 & 3

N

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
G	2000	3000	2500	6200	1500	13000	24000	2800	1200	1200	1300	1200	2200	1500	
F	6000	8000	5200	1500	2000	45000	3200	6500	3000	3000	1500	1600 ⊗	1700	3500	
E	4500	3000	2300	1500	1500	23000	3600	3800	7000	900	1200	1600	1500	3500	
	6200	1500	3500	1800	1800	47000	4200	6200	3000	1300	1500	1800	1800	8000	
D	3500	1500	1600	1800	1800	22000	4000	7200	1000	900	1800	1800	2200	2300	
	4800	2200	5200	3600	2500	12000	5000	3900	1200	3000 ○	3800	4800	1900	2000	
C	3800	3400	3000	4500	2000	1700	4500	3600	1000	2700	3700	4000	2200	2200	
	3100	3000	3800	3700	1600	2300	2500	2600	1900	1500	2500	2000	2600	2000	
B	5300	4100	3800	1900 ⊗	4100	2600	1500	3800	2500	2200	2200	3500	2500	5000	
	4700	5000	3500	1500	2400	1400	2600	2500	3000	1700	1500	1600	1500	3000	
A	6100	5300	4200	1500	1300 ○	2000	3200	3200	8300	6000	1500	1500	2000	3000	
	6700	3000	3000	1800	1000	1000	2000	10,000	6000 ○	1580	33000	8000	4000	2000	

⊗ Floor Drain ○ Pipe/Conduit Penetration

cpm W Floor monitor

Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM

Comments:	Scaler S/N	BKD	EFF	MDA
	CT = Alpha:			
	Tech Beta:			

Review

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time	3-18-97 @1500	Tech	M. Zigo	Instruments / sn	Ludlum 2221 J Floor Monitor
Location / Purpose	Floor Delineation Corridor			Survey #	139 RWP # N/A
Survey 139				BKD - 750	

N →

11, CORRIDOR

	A	C	E	G	I	K	M	O
12					2000 3200		2900 3800	1800 3500
	5000 7200	5700 6500	5900 7200	3900 6200	2500 8700	3700 8300	3500 5200	6700 3400	6000	2600 3400	2900 2100
14		3100 5400	3100 5500	8600 3100	8600 5300	6300 5200	3800 5000	12000	2100 3100
	3200 5100	6500 4000	6500 4000	8000 4000	4800 7500	5900 4400	2000 8000	2900	4800 3600
16	2100 3100	4000 5000	4000 5000	6000 4000	4200 5900	4700 3800	
	3100 8400	4000 2000	4000 12000	3500 1000			
18								

cpm @ Floor Monitor

1M X 1M GRID

Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM

Comments: Grids with no readings are inaccessible

Scalor S/N	BKD	EFF	MDA
CT = Alpha:			
Tech Beta:			

Review

(scaler measurement)

SAMPLE DATE: 4-3-97
LOCATION: BLD-14 PRAXAIR
AREA 2 & 3. OVERHEAD
SPOT. DELINEATION
SURVEY # 211

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

SITE NORTH

TOTAL BACKGROUND COUNTS	60
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE GRID	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS C.P.M.
1	A-5-C	12" STEAM PIPE	150-250
2	A-5-C	4" DRAIN LINE	80-140
3	A-5-C	STEEL BEAM ON SOUTH WALL	60-90
4	A-5-C	SOUTH BRICK WALL	80-120
5	A-5-C	MISC. CONDUIT	80-90
6	A-5-C	PIPE HANGERS, BRACE	80-100
7	B-5-C	CEILING (GYPSUM)	160-200
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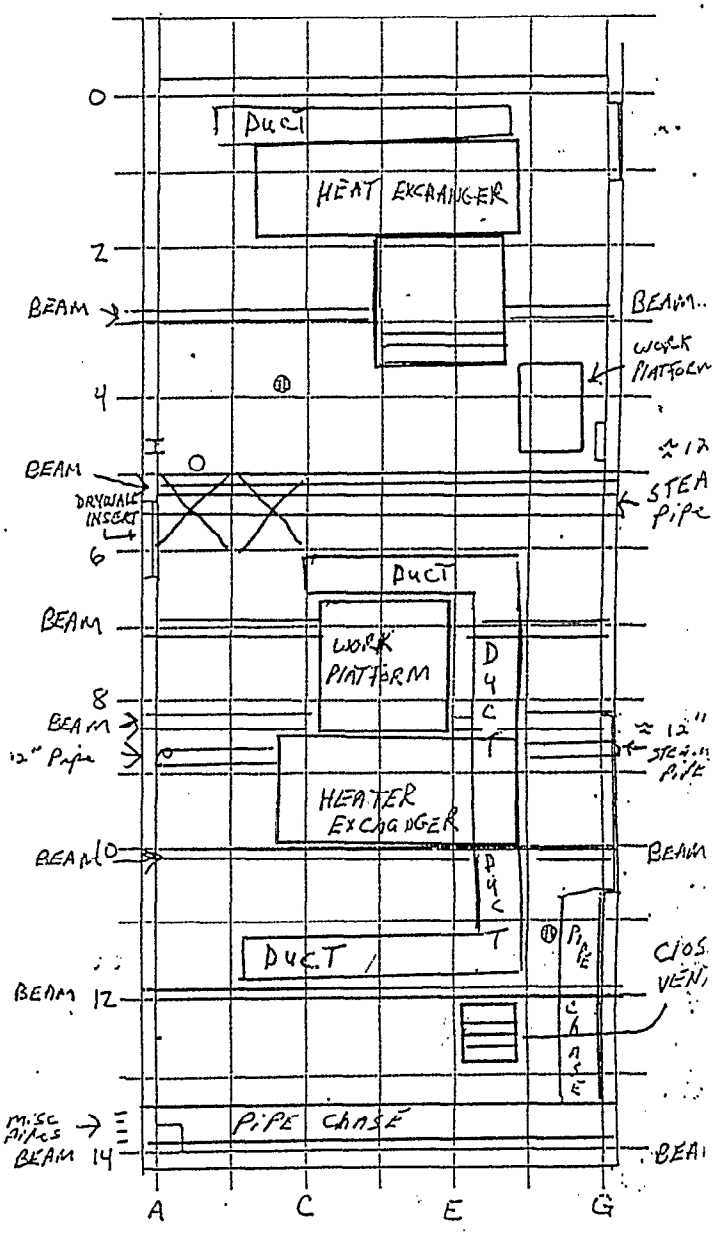


H.P. M. 3430

Instrument Model & s/n:	LUDLUM M-2
Detector Model & s/n:	44-9 SW 0622A
Calibration Date:	3-14-97
Efficiency	cpm / dpm based on S/Y90 -24
Detector Area	cm2 15.5

BUILDING 14 AREAS 2 & 3
⊕ = FLOOR DRAIN
O = PIPE/CONDUIT PENETRATION

REVIEW

(scaler measurements)

SAMPLE DATE: 4-7-97
LOCATION: PRAXAIR Bld. 14
AREA 2&3 Overhead
Delineation Survey
Survey # 226

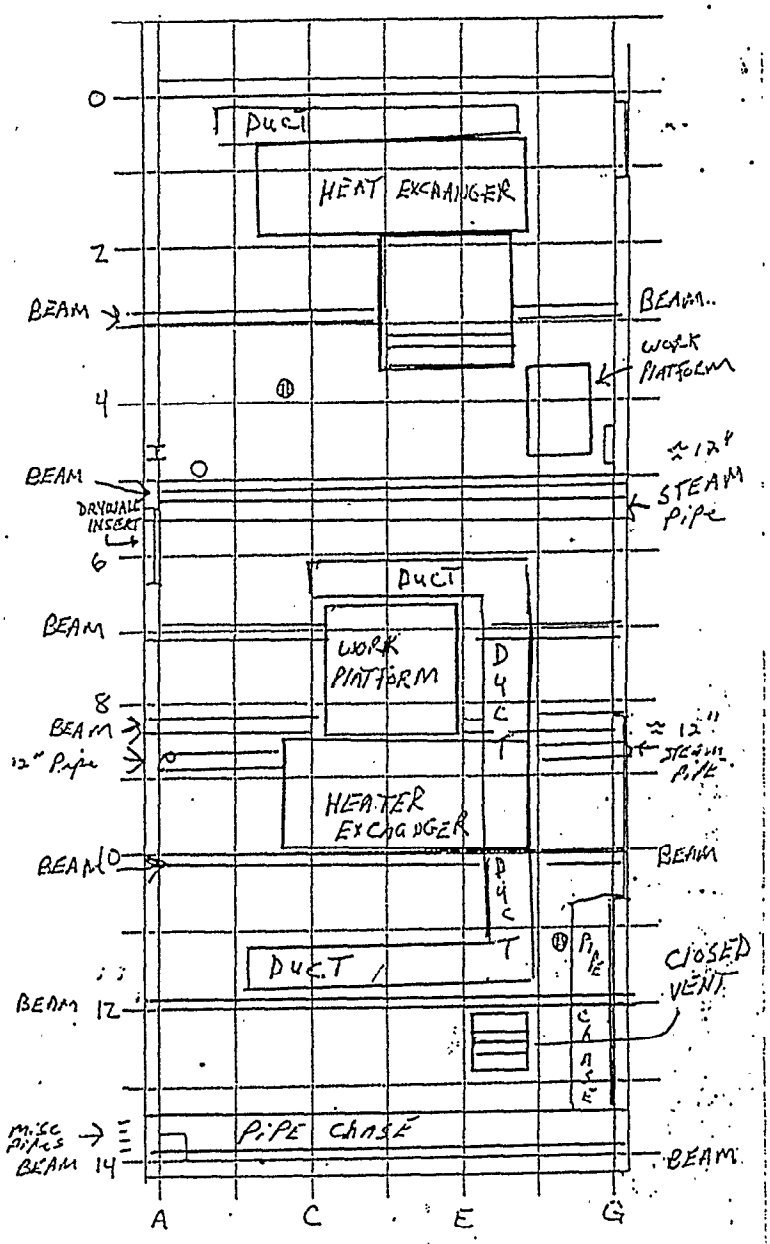
RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

SITE NORTH

TOTAL BACKGROUND COUNTS	
BACKGROUND COUNT TIME (MIN)	
SAMPLE COUNT TIME (MIN)	

GRID.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS C.P.M.
1	D-7	Duct (Horiz)	60-100
2		Work Platform	60-100
3		Asbestos Steam Line	80-100
4		Iron Steam Line	60-90
5			
6	D-8	I Beam North-South	60-90
7		Ceiling	100-140
8		Gate Valve 2"	60-90
9		Heater Unit (Horiz)	100-120
10		Electric Motor	60-80
11		Pully Cage	60-80
12		Electrical Conduct	60-80
13			
14	C-8	North-South Beam	80-100
15		Vent Duct (Entake)	60-90
16		2" Pipe	60-80
17		Ceiling	100-140
18		Electrical Conduit	80-90
19		Misc. Braces	80-90
20			
21	B-8	Electrical Conduit	80-100
22		North-South Beam	80-100
23	A-8	East-West Beam	90-100
24		Brick Wall	90-120
25		Ceiling	100-140
26		1/2" Black Iron Pipe	120-140
27			
28	A-7	Duct	80-120
29		Light Fixtures	80-90
30		Ceiling	100-140
31		Beam	80-90
32		Brick Wall	120-140
33			
34	B-7	Duct	80-100
35		Beam	80-100
36		Ceiling	100-140
37	A-9	Vent Duct (Closed)	80-100
38		East-West Beam	80-90
39		Heat Exchanger	80-120
40		Beam East-West	80-90



H.P. TM. 3190

Instrument Model & s/n:	LuDLum M-2 CODE V
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on SM90 .22
Detector Area	cm2 15-5

BUILDING 14 AREAS 2&3
⊕ = FLOOR DRAIN
O = PIPE/CONDUIT PENETRATION

ENCL-C2.XLS

Review

(scaler measurement)

SAMPLE DATE: 4-8-97 @ 0800-1700
LOCATION: PRAXAIR BLD.-14
AREA-2&3 OVERHEAD
SURVEY # 230

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scalor measurements

SITE NORTH →

TOTAL BACKGROUND COUNTS	60
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS C.P.M.
1	B-11	HEAT DUCT	80-100
2		NORTH & SOUTH BEAM	80-100
3	A-11	BRICK WALL	80-100
4		EAST & WEST BEAM	60-90
5		Ceiling (NEW LOOKING)	60-90
6		Ceiling OLD	100-140
7	B-11	HEAT DUCT	60-80
8		HEAT UNIT	60-90
9	C-11	DUCT	60-90
10		HEAT UNIT	60-90
11	D-11	DUCT	80-90
12		HEAT UNIT	60-90
13			
14	A-13	6" INSULATED PIPE	300-400
15	B-13	" " "	400-500
16	A-13	WALL PENETRATIONS	100-160
17		NORTH SOUTH BEAM	90-120
18	G-14	BEAM EAST-WEST	80-100
19		8" INSULATED PIPE	100-140
20			
21	C-13	SPOT CK. Misc. Pipes	80-100
22	D-13	spot ck Misc. Pipes	80-120
23			
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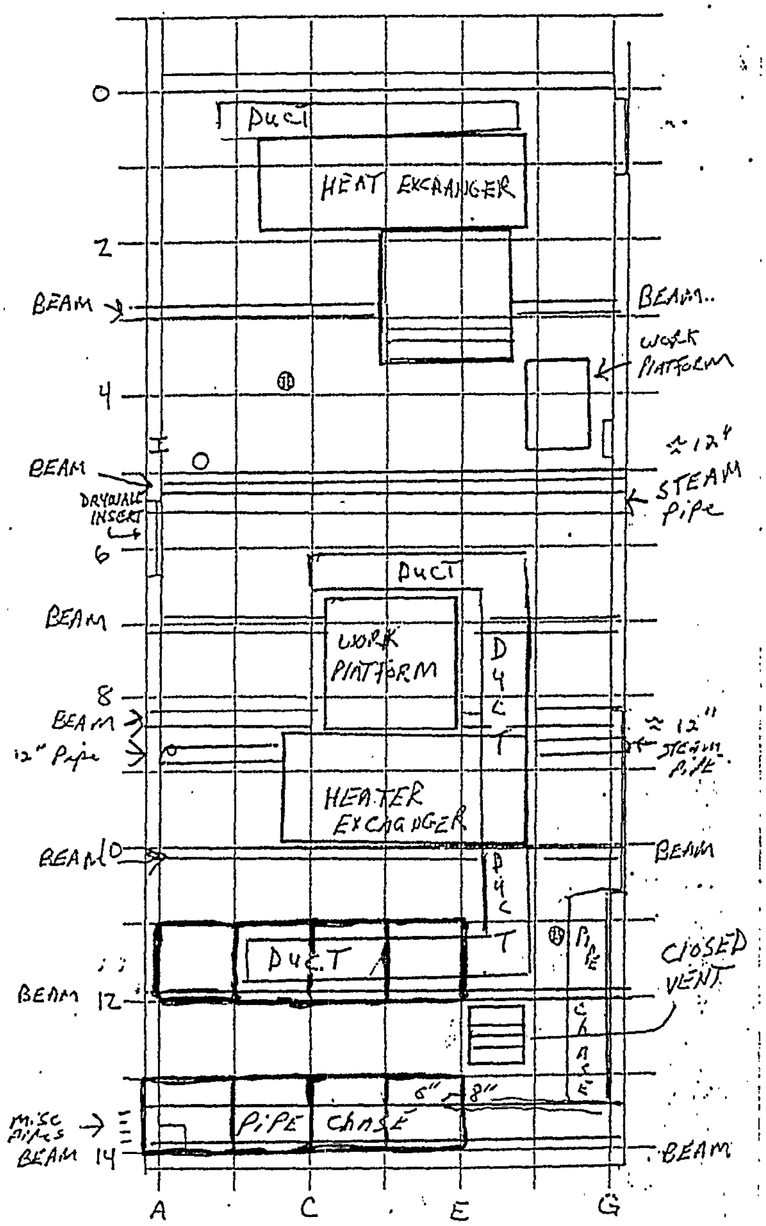


H.P. M. 3igo

Instrument Model & s/n:	LUDLUM M-2 "V"	
Detector Model & s/n:		
Calibration Date:	3/14/97	
Efficiency	cpm / dpm based on Sr/Y90	.23
Detector Area	cm2	15.5

BUILDING 14 AREAS 2&3
⊕ = FLOOR DRAIN
O = PIPE/CONDUIT PENETRATION

ENCL-C2.XLS

REVIEW [signature]

SURVEY # 237

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 4-7-97
LOCATION:

Building 14, Areas 2 & 3

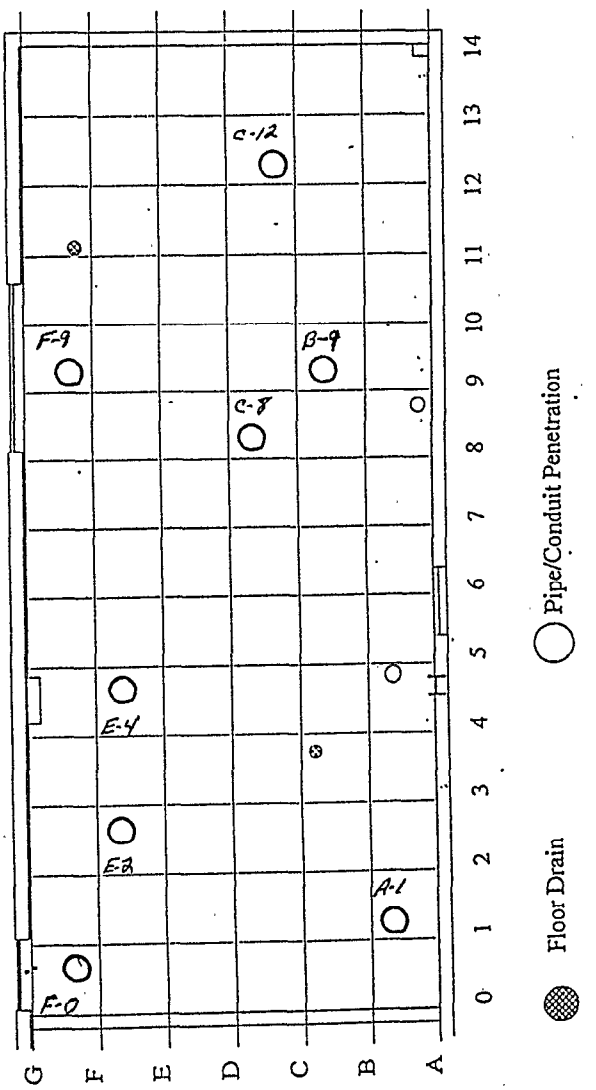
CORE BORING FLOOR FOR SOIL SAMPLING.

& SURVEY

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	17405
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS 1 MIN.
1	F-0	@ 1 METER FROM FLOOR	18696
2		@ SOIL SURFACE	26170
3		@ 1-2'	19827
4		@ 2-3'	18233
5	↓	@ 3-4'	18171
6	A-1	@ 1 METER FROM FLOOR	19128
7		@ SOIL SURFACE	26823
8		@ 1-2'	20950
9		@ 2-3'	20271
10	↓	@ 3-4'	20313
11	E-2	@ 1 METER FROM FLOOR	17806
12		@ SOIL SURFACE	28682
13		@ 1-2'	21021
14		@ 2-3'	20824
15	↓	@ 3-4'	20241
16	E-4	@ 1 METER FROM FLOOR	17474
17		@ SOIL SURFACE	32751
18		@ 1-2'	20162
19		@ 2-3'	19007
20	↓	@ 3-4'	18412
21	C-8	@ 1 METER FROM FLOOR	18147
22		@ SOIL SURFACE	27683
23		@ 1-2'	21237
24		@ 2-3'	20341
25	↓	@ 3-4'	20162
26	F-9	@ 1 METER FROM FLOOR	15095
27		@ SOIL SURFACE	32468
28		@ 1-2'	20343
29		@ 2-3'	19873
30	↓	@ 3-4'	20584
31	B-9	@ 1 METER FROM FLOOR	18016
32		@ SOIL SURFACE	31279
33		@ 1-2'	21216
34		@ 2-3'	20253
35	↓	@ 3-4'	20140
36	C-12	@ 1 METER FROM FLOOR	18289
37		@ SOIL SURFACE	31386
38		@ 1-2'	20261
39		@ 2-3'	20150
40	↓	@ 3-4'	19422



○ = LOCATION OF CORES BORED IN FLOOR.

4-7-97

Instrument Model & s/n:	L2221 # 81328 PR/44-10 # 074140
Detector Model & s/n:	NaI
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90
Detector Area	cm2

REVIEW:

ENCL-C2.XLS

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

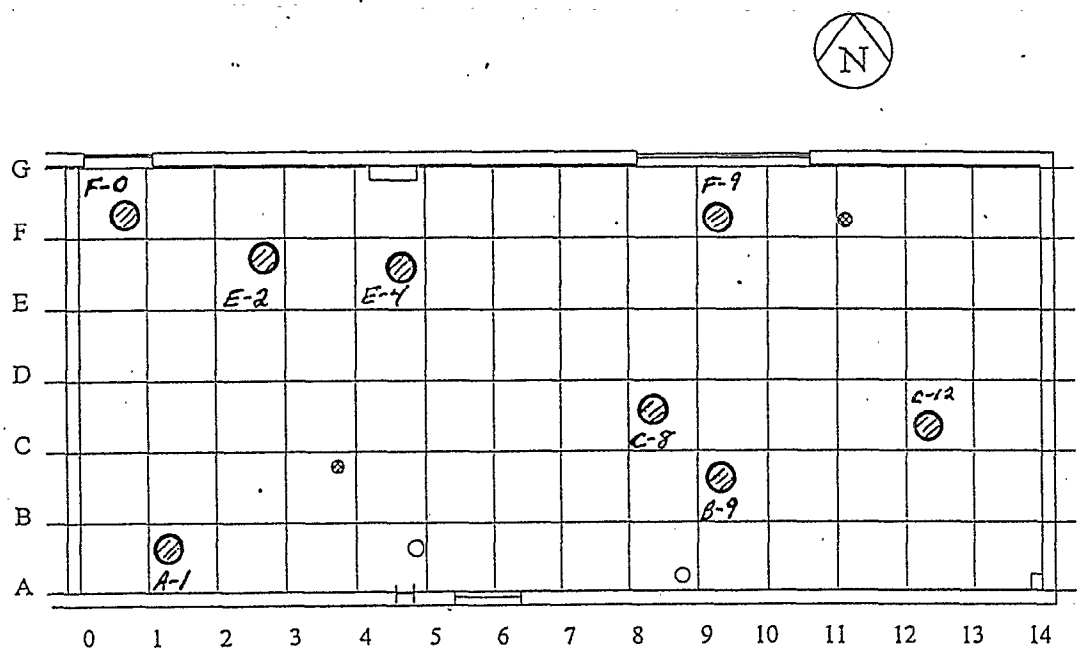
IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 4-8-97 0900	Tech Wilbur W. Fuller
Location / Purpose B-14 AREA 2 & 3 FLOOR CORES	Survey # 237
~~SAMP~~ INFO.	RWP #
	Instruments / sn L2221 # 91935 W/44-9 # 091747

Building 14, Areas 2 & 3



= CORE BORING LOCATION

GRID SEE MAP

Loc	Type	Description	Gross	A DPM	CORE TOPS Gross	CORE TOPS Beta DPM/100cm²
A-1	D.P.	CORE FROM WITHIN GRID			308	7980
F-0					91	611
E-2					114	1392
E-4					143	2377
F-9					126	1800
C-8					1306	41868
B-9					94	713

GRID SEE MAP.

Loc	Type	Description	Gross	A DPM	CORE TOPS Gross	CORE TOPS Beta DPM
C-12	D.P.	CORE FROM WITHIN GRID	N/A		131	~~2~~ 1969

Comments: D.P. = DIRECT PROBE COM B8 W/44-9, 15.5 cm² DETECTOR #091747

Scaler S/N L2221 #91935

CT = /MIN.

Tech W.

	BKD	EFF	MDA
Alpha:	N/A	N/A	N/A
Beta:	73	19	

Review

*NOTE: VERTICAL SIDES OF CORES SURVEYED BY D.P.: ALL < 5K DPM/100cm² BY.

HILBERT ASSOCIATES, INC.

(scaler measurement)

SURVEY # 277

C. HALLAM / W. JESKE

SAMPLE DATE: 4-14-97

LOCATION: B14 AREAS 2 & 3 OVHD

DELINEATION

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

SITE NORTH

TOTAL BACKGROUND COUNTS	62
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	N/A - SCAN

100% = CONTAMINATED AREA

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	A4	6" VERT PIPE @ 30° ELBOW JOINTS	160 - 280 cpm
2	A0 - A4	6" HORIZ SEWER PIPE	170 - 270 cpm
3	F0	CONDUIT TEE	220 - 250 cpm
4	A13 - D13	STEAM PIPE LAGGING	170 - 320 cpm
5	A13	STEAM VALVE	200 - 600 cpm
6	A5 - G5	STEAM PIPE LAGGING	50 - 250 cpm
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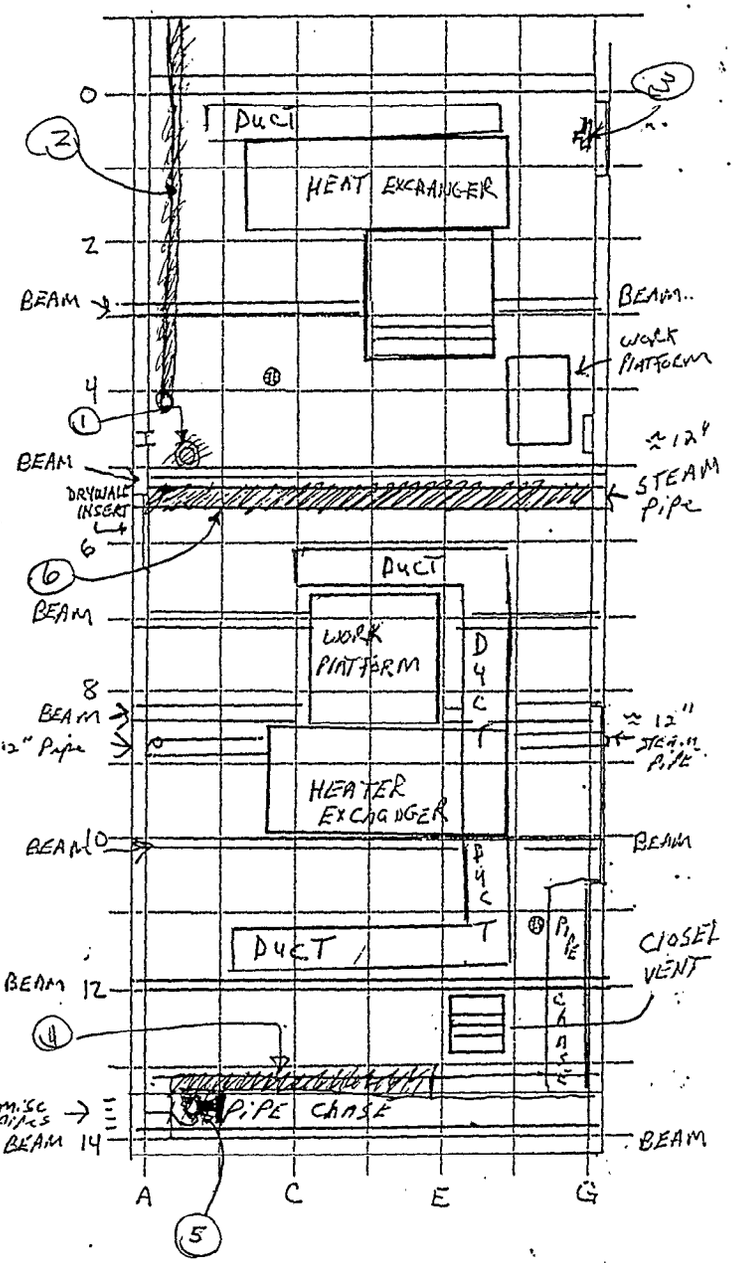

Instrument Model & s/n:	L2221 / D
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.21 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

BUILDING 14 AREAS 2 & 3

⊕ = FLOOR DRAIN

○ = PIPE / CONDUIT PENETRATION

REVIEW

ENCL-C2.XLS

SURVEY 279

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 4-15-97
LOCATION:

Building 14, Areas 2 & 3

DELIN. SURVEY
WALLS

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	68 CPM
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

*NOTE: ALL WALLS SURVEYED 100% OF SURFACE AREA UPTO 2 METERS HIGH FROM FLOOR.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS CPM BY
1	A-7 AA	SOUTH WALL	200 - 600
2	A-8 AA		300 - 700
3	A-9 AA		180 - 280
4	SEE AA	@ WALL BEHIND MOP MOLDING	280
5	GRID		310
6	MAP		220
7			190
8			160
9			530
10			490
11			500
12			340
13	G-6 BB	@ NORTH WALL	720
14	G-5 AA	@ WALL BEHIND MOP MOLDING	160
15	A-2 BB	@ SOUTH WALL ON CONCRETE EDGE UPTO 300	
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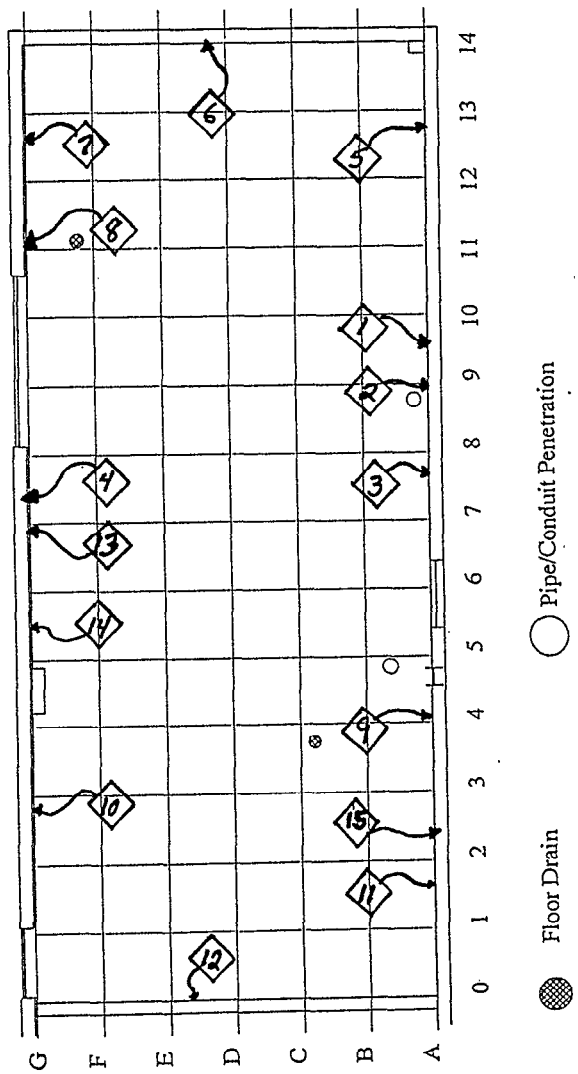


KEY: = DIRECT PROBE READING / CPM BY (1 MIN. COUNT TIME)

William W.
4-15-97

Instrument Model & s/n:	L2221 # 91935 W144-9 # 091747
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .19
Detector Area	cm2 = 15.5

REVIEW

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

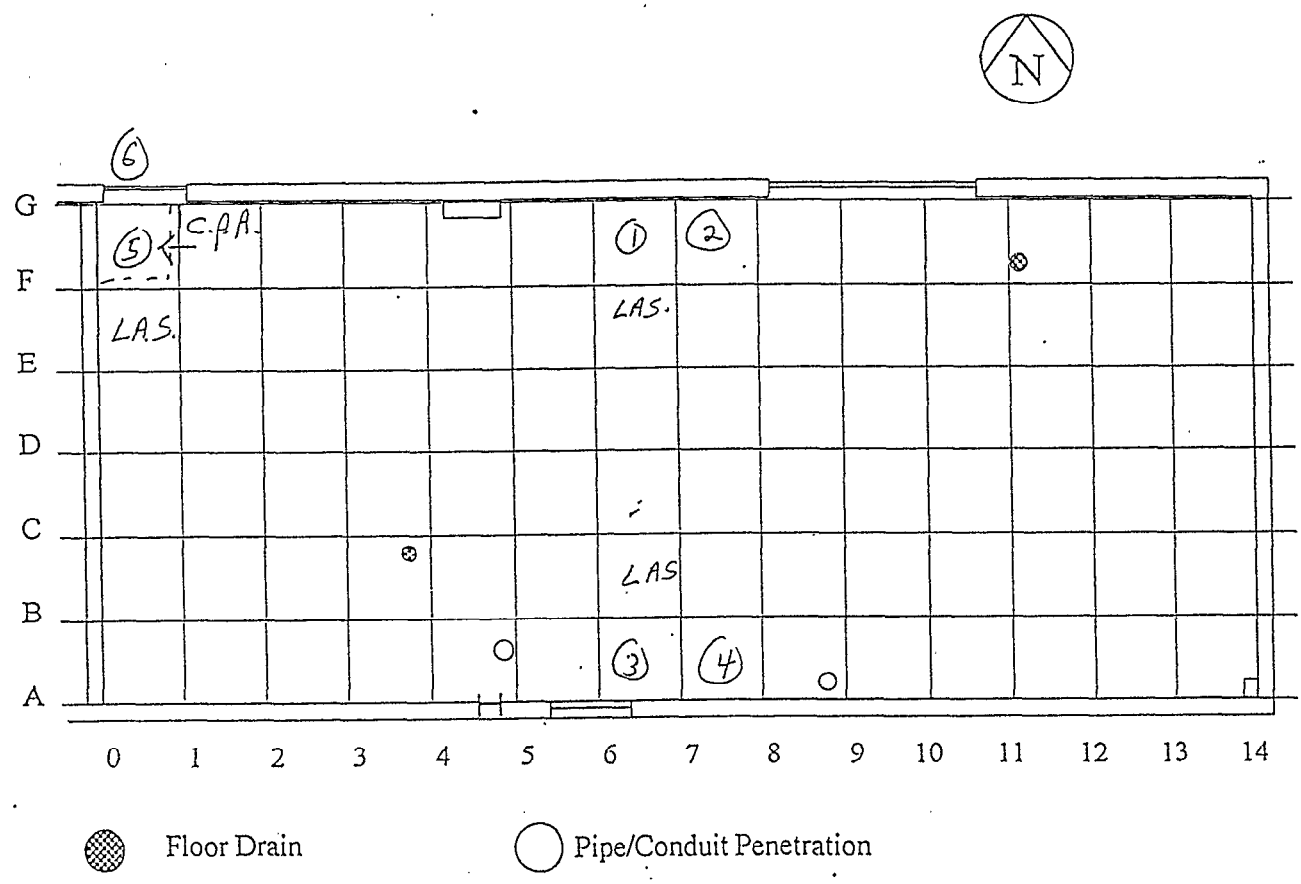
IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 5-8-97 1640	Tech M. Zuga	Instruments / sn Ludlum 2221 D.	
Location / Purpose B-14 area 2&3 - Delineation		Survey # 314	RWP # 02
Contamination down Post Survey.			

Building 14, Areas 2 & 3



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	floor	0	-1	58	-3
2	S		0	-1	45	-48
3	S		0	-1	58	-3
4	S		1	2	40	-66
5	S		0	-1	59	0
6	S		1	2	71	41

Loc	Type	Description	Gross	A DPM	Gross	Beta DPM

Comments: (5) swipe location
L.A.S. = Large area swipe
Note: no detectable activity on L.S.A.
C.P.A. = Control Point area.

Scaler SN Ludlum 2929	BKG	EFF	MDA
CT = 1 Alpha:	10/10	.32	14
Tech M. Zuga Beta:	4163/10	.39	132

Review

HILBERT ASSOCIATES, INC.
SURVEY # 335
C. Hallam/C. Hall
SAMPLE DATE: 5-13-97
LOCATION: B14 AREA 2 CORE DRILLING/SAMPLING

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

SITE NORTH →

TOTAL BACKGROUND COUNTS	74
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN/SCAN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	C9	TOP OF CORE	70-90 CPM
2		SIDE OF 1ST LAYER	70-90 CPM
3		BOTTOM OF 1ST LAYER	70-90 CPM
4		TOP OF 2ND LAYER	80-110 CPM
5		SIDE OF 2ND LAYER	70-90 CPM
6		BOTTOM OF CORE	70-90 CPM
7		TOP OF 0-1' SAMPLE	70-90 CPM
8		TOP OF 1-2' SAMPLE	70-90 CPM
9		TOP OF 2'-3' SAMPLE	80-110 CPM
10	▼	TOP OF 3'-4' SAMPLE	80-110 CPM
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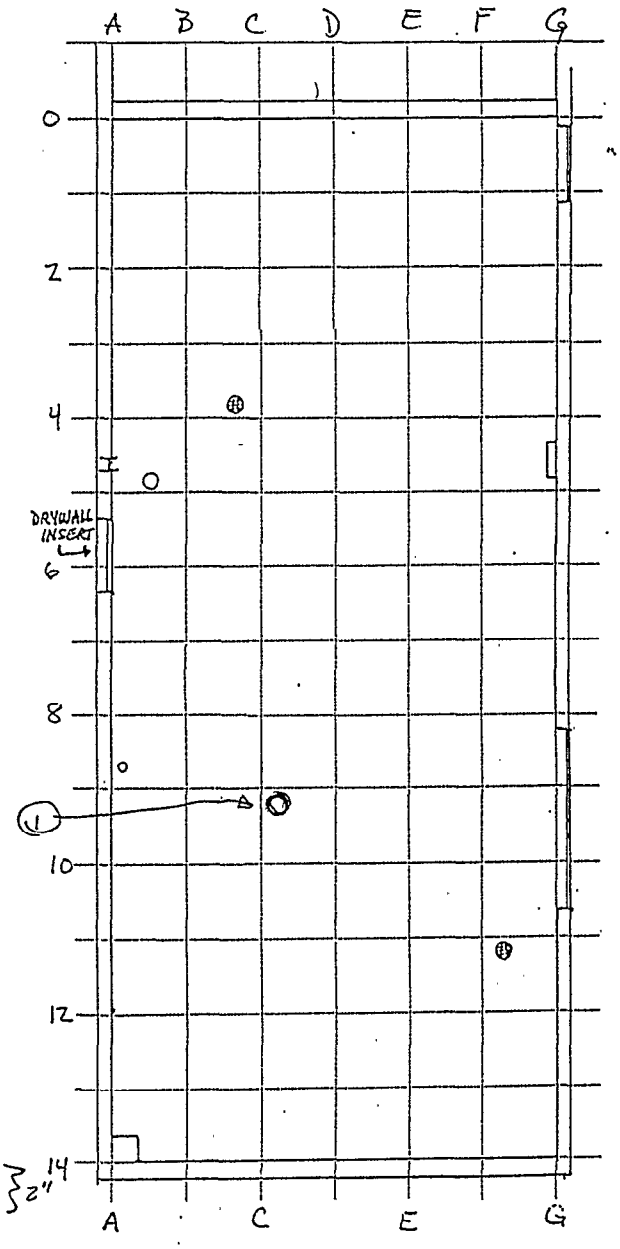

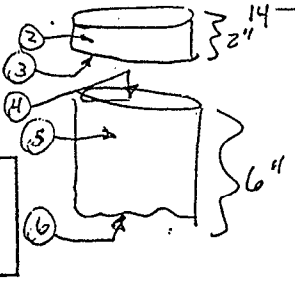

Instrument Model & s/n:	42221/D	
Detector Model & s/n:		
Calibration Date:		
Efficiency	0.25	cpm / dpm based on S/Y90
Detector Area	15.5	cm2

BUILDING 14 AREAS 2 & 3
⊕ = FLOOR DRAIN
O = PIPE/CONDUIT PENETRATION

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REVIEW

APPENDIX B-2

DELINEATION SURVEYS FOR AREAS 4, 4A, AND 4B

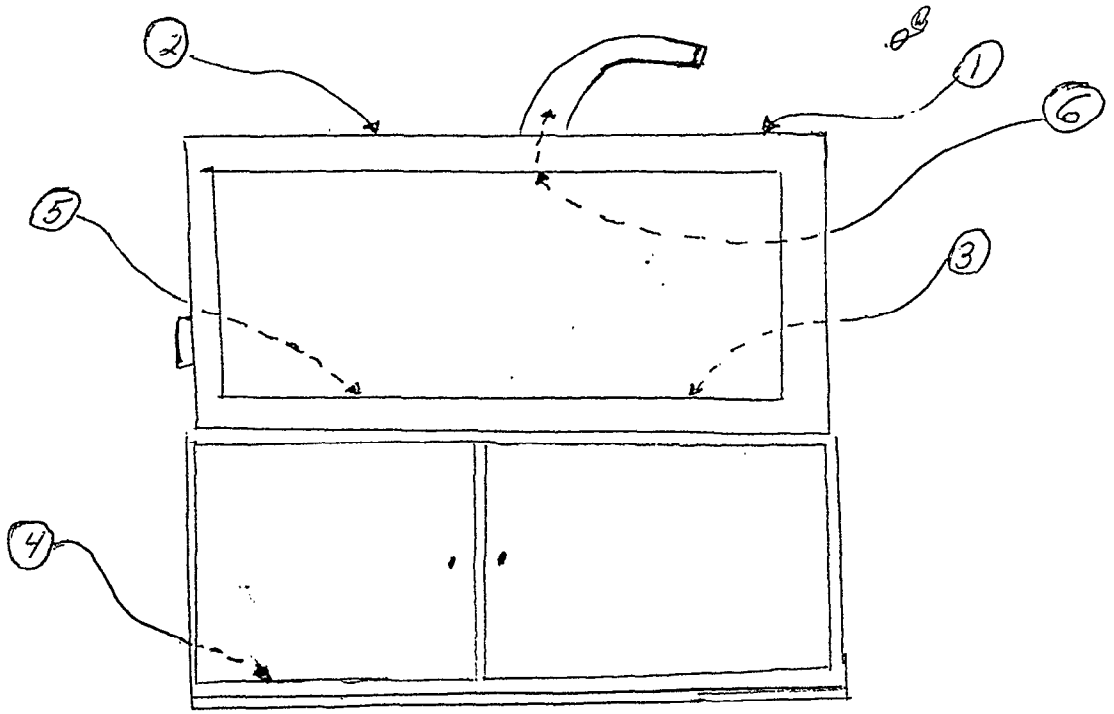
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 3-6-97	Tech Marr / Jeskes	Instruments / sn 2929/91234 (I)
Location / Purpose PRAXAIR SITE BLDG-#14		Survey # 042 RWP # N/A
AREA 4-HOOD - (PARTIAL UNCONDITIONAL FREE RELEASE)		



KEY:

(#) = SMEAR LOCATION & DIRECT PROBE MEASUREMENT
--- = INTERNAL SMEAR OF HOOD AND DIRECT PROBE MEASUREMENT

BK
BKGD = 70 cpm
EFF = .20

MAIN COUNTS

Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM/100 cm²
1	S	Top of Hood	0	0	63	-10	1	DP	SEE MAP			68	-65
2	S	Top of Hood	0	0	59	-23	2	DP				73	97
3	S	Inside Hood	0	0	53	-43	3	DP		N	/	49	-677
4	S	Bottom Shelf-Hood	0	0	61	-17	4	DP			A	62	-258
5	S	Inside Hood	1	3	42	-80	5	DP				74	129
6	S	Inside Hood	0	0	60	-20	6	DP	↓			59	-354
		N/A							N/A				

Comments:

Scaler S/N I L2929	BKD	EFF	MDA	
CT = 1 min	Alpha:	141/700	.34	14
Tech R.	Beta:	46074/700	.30	155

Review

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

C. HALLAM / CWalker

SAMPLE DATE: 030397, 030497, 030597, 030697, 031097
LOCATION: Building 14, Area 4
SURVEY FOR DELINEATION OF OVHD, PIPING, INSTALLED EQUIPMENT, AND WALLS ABOVE BASEBOARDS

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	71
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	N/A - SCAN

SURVEY # 052

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	A0 → G6	DIRECT SCAN SURVEY OF	4200 CPM
2	"	OVERHEADS I-BEAMS, VALVES,	
3	A'0" → G'4"	PIPING, INSTALLED EQUIP-	
4		MENT INCLUDING HVAC	
5		UNITS, AND WALLS ABOVE	
6		BASEBOARDS OF AREA 4	
7		WITH THE EXCEPTION OF RECESS/	
8		PIPE END IN A6 OVHD	
9		AS NOTED ON SURVEY #053	
10		DATED 031097	
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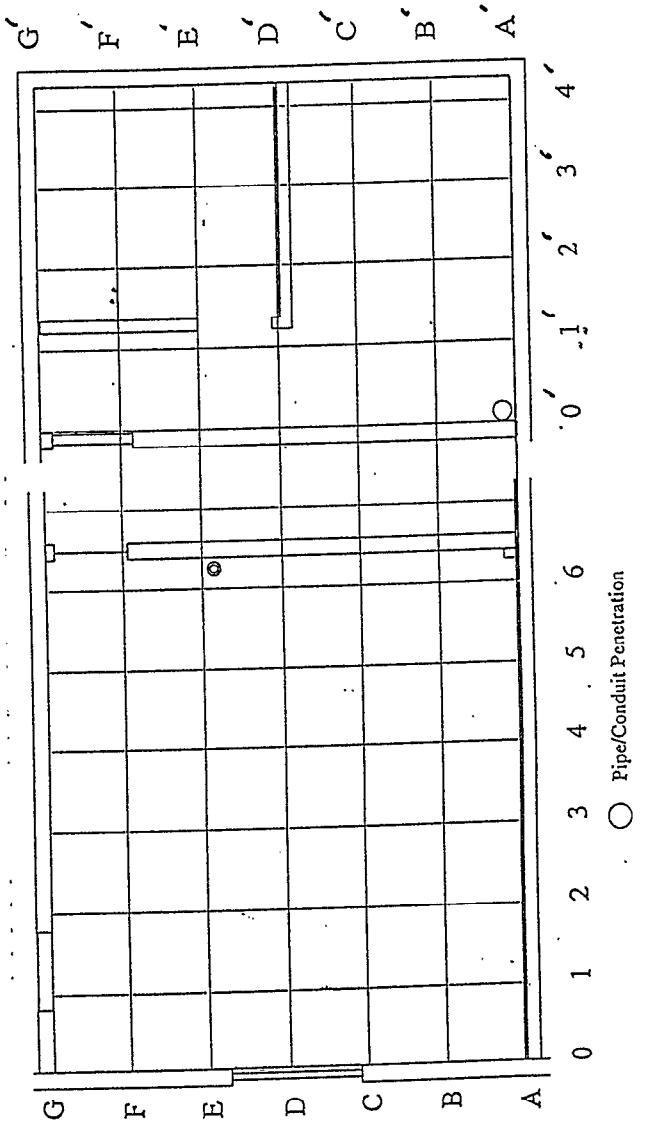

Instrument Model & s/n:	42221 / 86313	D
Detector Model & s/n:	44-9 / 91749	
Calibration Date:	020797	
Efficiency	0.20	cpm / dpm based on S/Y90
Detector Area	15.5	cm2

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Reviewed

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT

(scaler measurement)

SURVEY # 053

SAMPLE DATE: 3-10-97

LOCATION: Building 14, Area 4

EAST WALL (SOUTH SIDE)

DELINEATION SURVEY

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	49 cts
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN

cpm BY

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	386 CPM	STEEL PIPE CUT @ WALL @ 14" FROM FLOOR (4" PIPE)	
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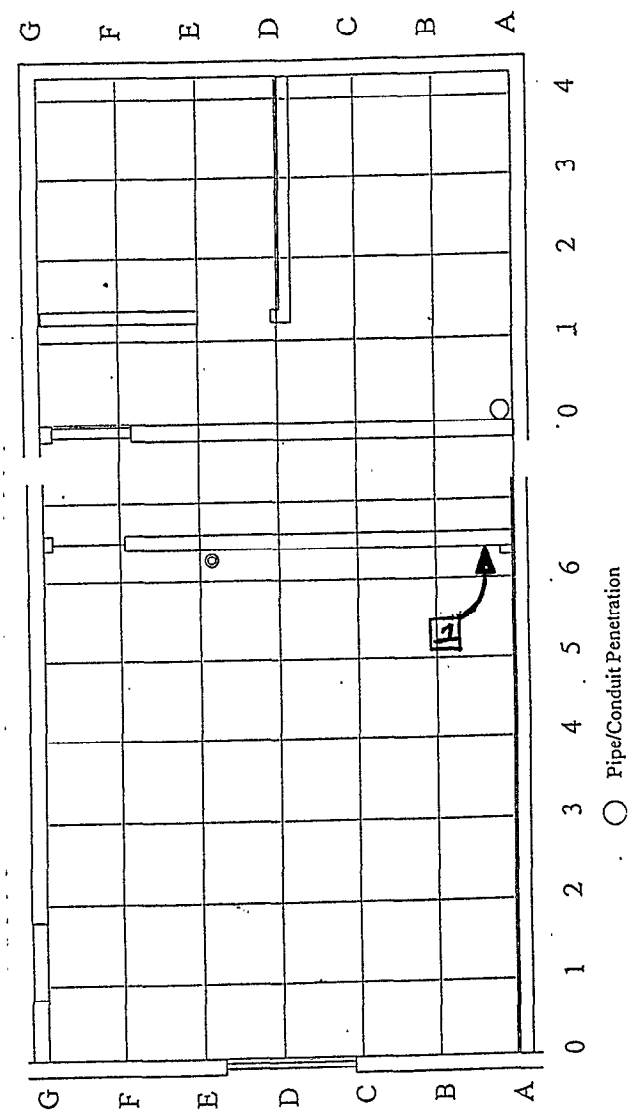

Instrument Model & s/n:	(C) L2221
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20 EFF.
Detector Area	cm2 = 15.5

William W
3/10/97

REVIEW:

PAGE 1

ENCL-C2.XLS

SURVEY - 191

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-31-97
LOCATION:
PRAXAIR SITE
BLDG. #14
AREA 4
DELINEATION SURVEY

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	50
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
			CPM BB
1	E-0 BB	WINDOW LEDGE - HORIZONTAL	150
2	A-0 BB	↓	150
3	C-0	UNDER SLIDING DOOR @ FL.	160
4	C-0	BEHIND SLIDING DOOR @ FL.	150
5	C-1	VENT. UNIT AIR SUPPLY DUCT	80
6	D-2	VENT. UNIT TOP HORIZONTAL	70
7	D-1	VENT. UNIT - MOTOR	80
8	D-2	INSULATED PIPE CHASE	65
9	↓	↓	70
10	↓	↓	80
11	E-2	I BEAM HORIZONTAL	70
12	↓	↓	80
13	G-4 DD	WALL PENNATRATION	120
14	C-6 CC	EAST WALL SURFACE - BRICK	150
15	A-6 FF	STEEL PIPE INTERNAL	UP TO 400
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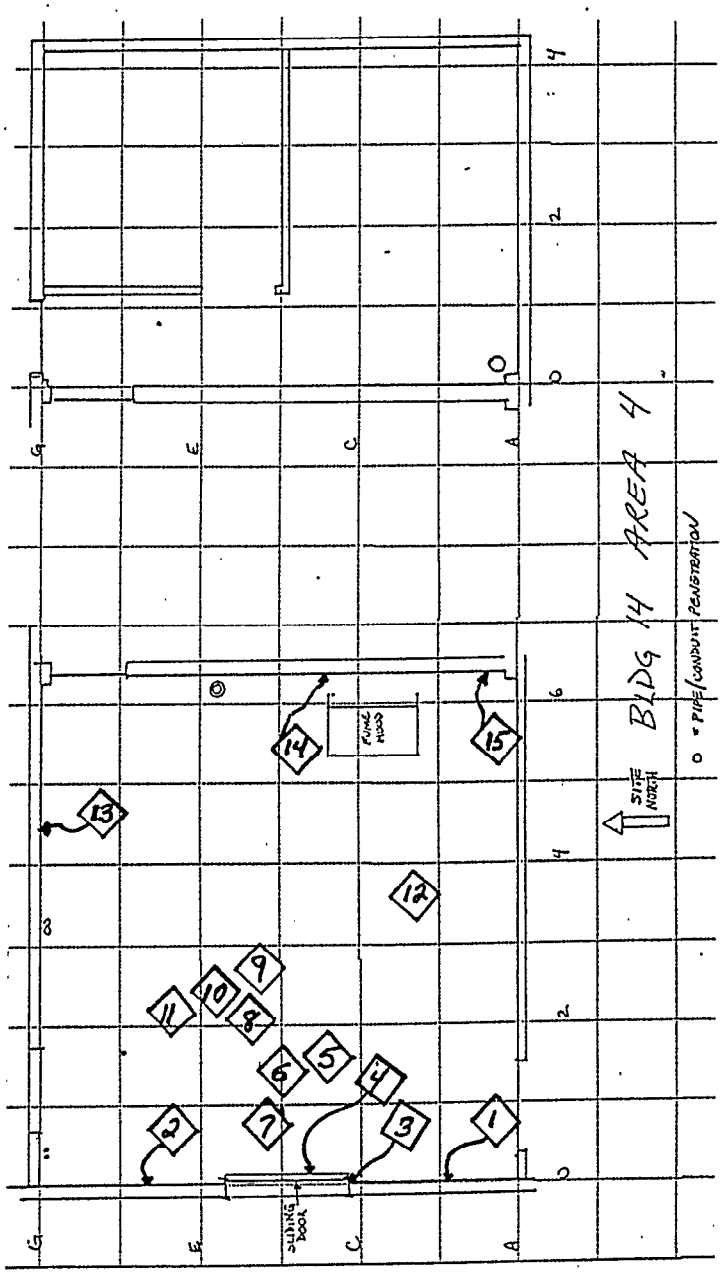


KEY:
(#) = DIRECT PROBE MEASUREMENT BB

William W Yost
3-31-97

Instrument Model & s/n:	L2221 # 91935 W/44-9 # 91744
Detector Model & s/n:	
Calibration Date:	3-4-97
Efficiency	cpm / dpm based on S/Y90 = .19
Detector Area	cm2 = 16.5

REVIEW

SURVEY # 076

HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

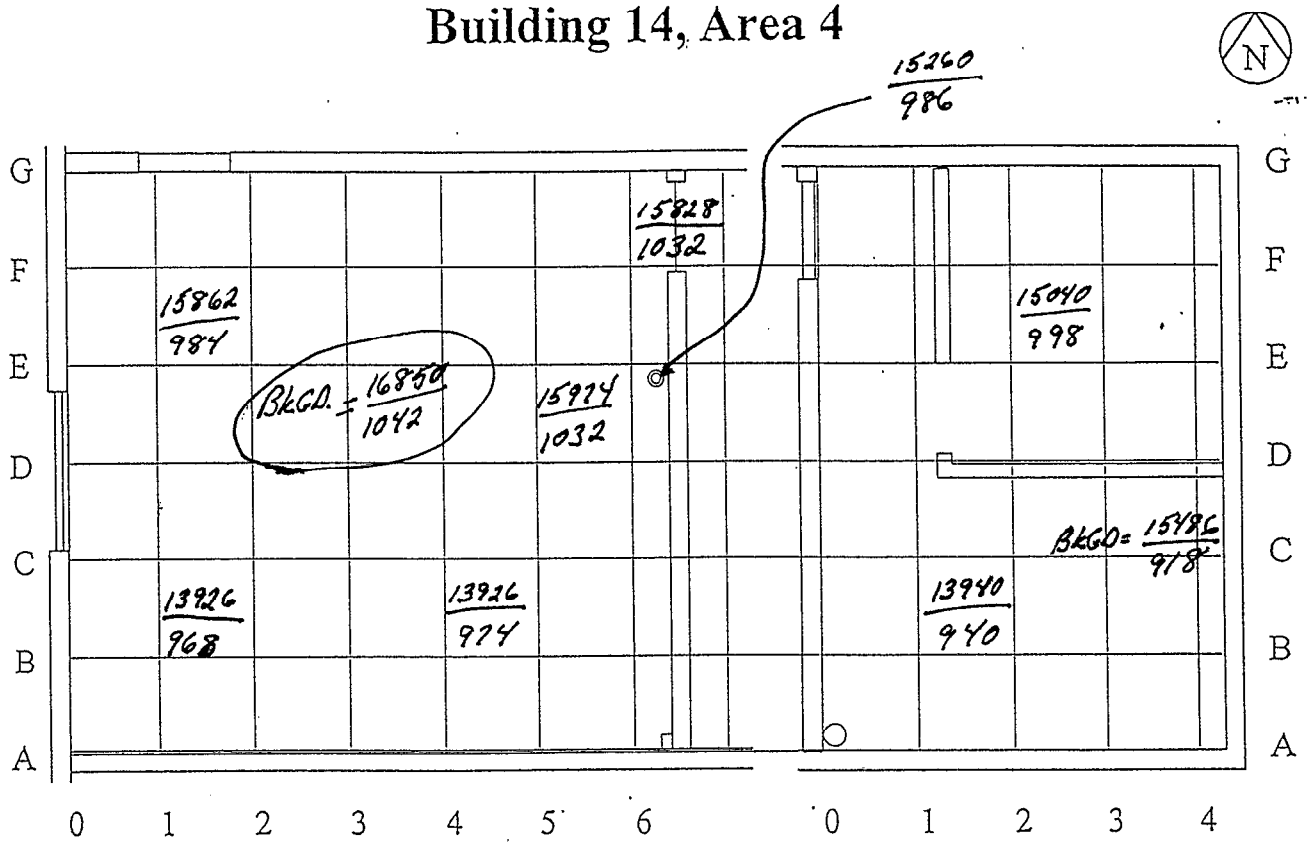
IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 3-12-97 / Tech W	Instruments / sn INST (E) W/44-10 & INST. (J) W/43-37
Location / Purpose PRAXAIR B-14 AREA 4	Survey # 076 / RWP # N/A
FLOOR AREA DELINEATION	

Building 14, Area 4



○ Pipe/Conduit Penetration

$\frac{\#}{\#} = \frac{2\times2\ NaI\ CPM}{FLOOR\ MONITOR\ CPM}$

Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
		SEE GRID MAP.											
		ALL READINGS ARE IN GROSS											
		CPM USIN 2X2 NaI & FLOOR											
		MONITOR DETECTORS.											

N/A

Comments: INST. (J) L2221 W/43-37 EFF. = .20
= 1 MIN COUNT TIME

Scaler S/N		BKD	EFF	MDA
CT =	Alpha:			
Tech	Beta:			

Review

W. Zigo
W
3-12-97

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 315

C. Hallam/ebhall

SAMPLE DATE: 5-8-97

LOCATION: B14 AREA 4 DELINEATION OF LOWER WALL/BASEBOARD AREA

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

~~XXXX~~ = CONTAMINATED AREA

TOTAL BACKGROUND COUNTS	64
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	N/A - SOAN

ALL BASEBOARD AREAS VERIFIED ~~<5K dpm/100~~ 5-12-97 < 200 CPM IN AREA 4 WITH THE EXCEPTION OF THOSE AREAS NOTED BELOW

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	E0	BASE OF WALL (UP TO 8")	200-400 CPM
2	E6	BASE OF WALL (UP TO 8")	150-220 CPM
3	E5	BASE OF WALL (UP TO 12")	150-500 CPM
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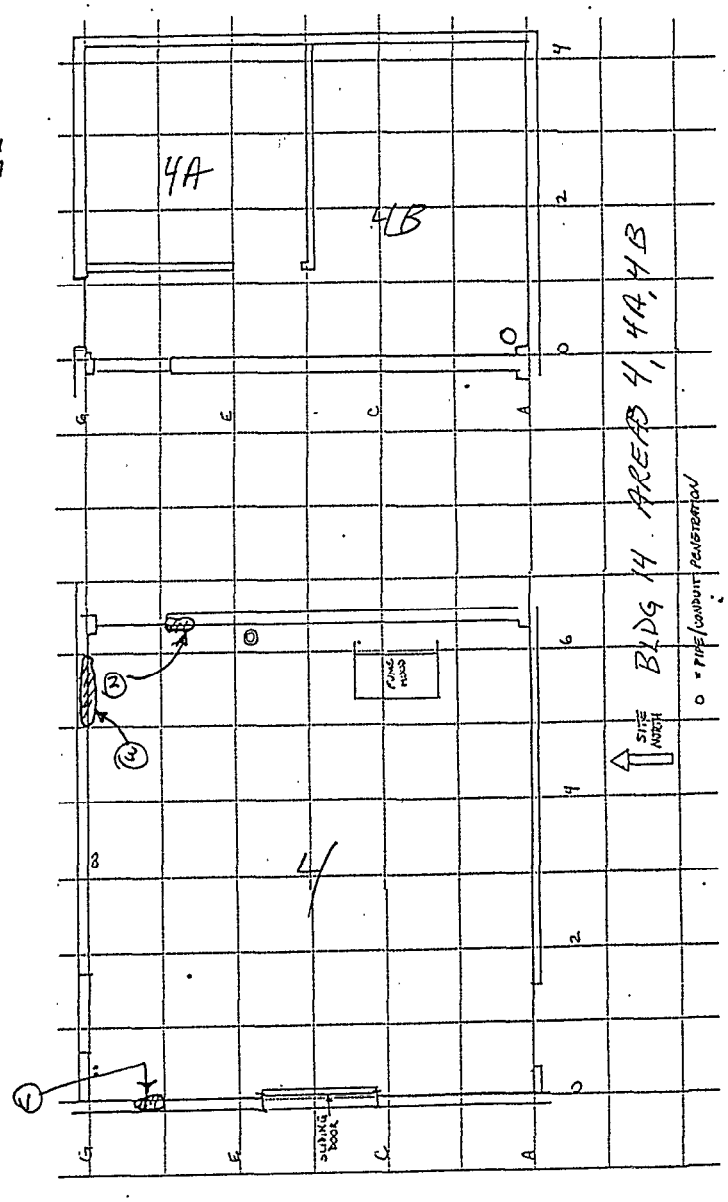

Instrument Model & s/n:	L2221 / A
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.21 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW

ENCL-C2.XLS

HILBERT ASSOCIATES, INC. 5-8-97 DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
SURVEY # 316
C. HALLAM/[illegible]
(scaler measurement)

SAMPLE DATE: 5-8-97
LOCATION: B14 AREA 4 CORE DRILLING/SAMPLING

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	67
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN/SCAN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	FO	TOP OF CORE PRIOR TO DRILLING	60-80 CPM
2	↓	SIDE OF CORE	50-70 CPM
3	C1	TOP OF CORE PRIOR TO DRILLING	60-80 CPM
4	|	SIDE OF CORE (UPPER)	60-80 CPM
5	↓	BOTTOM OF 9" CORE	70-90 CPM
6	↓	TOP OF 2ND LAYER (@ 3" POINT)	60-80 CPM
7	↓	SIDE OF LOWER CORE	60-80 CPM
8	↓	BOTTOM OF 1ST LAYER	60-80 CPM
9	↓	TOP OF 0-1' SAMPLE	50-70 CPM
10	↓	TOP OF 1'-2' SAMPLE	60-80 CPM
11	↓	TOP OF 2'-3' SAMPLE	60-80 CPM
12	↓	TOP OF 3'-4' SAMPLE	70-90 CPM
13	B5	TOP OF CORE PRIOR TO DRILLING	60-80 CPM
14	|	SIDE OF 1ST LAYER	60-80 CPM
15	↓	BOTTOM OF 1ST LAYER	60-80 CPM
16	↓	TOP OF 2ND LAYER	60-80 CPM
17	FO	SIDE OF UPPER SLAB	60-80 CPM
18	↓	SIDE OF FOOTER	60-80 CPM
19	↓	TOP OF FOOTER	60-90 CPM
20			
21			
22			
23			
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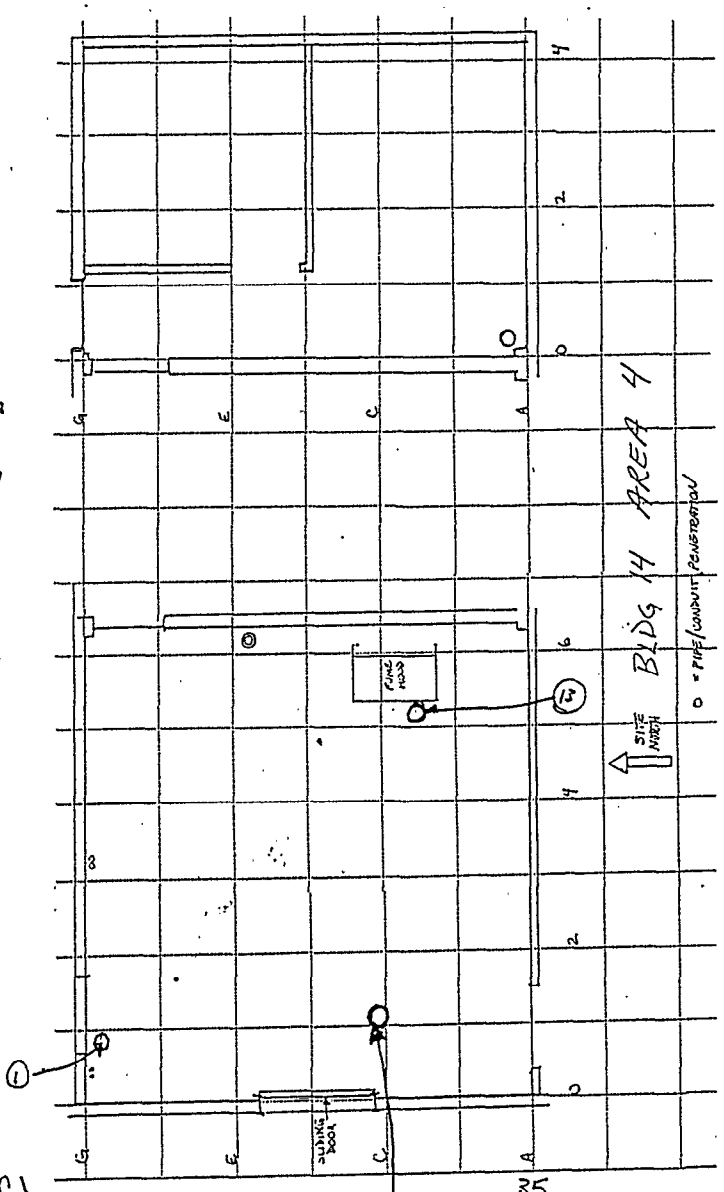

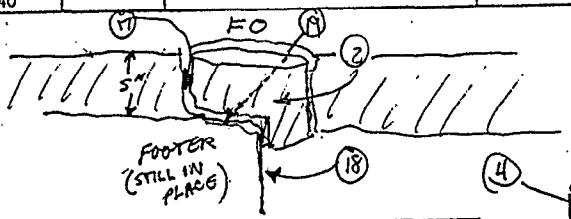

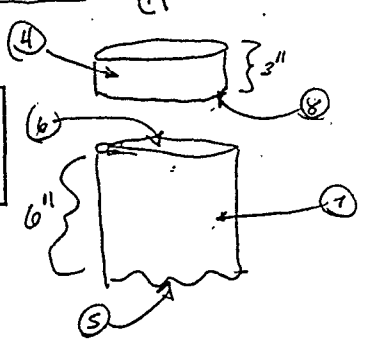

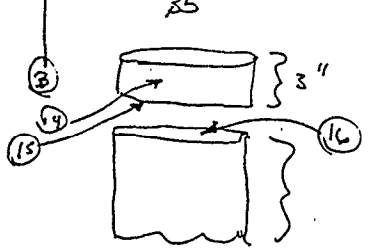

Instrument Model & s/n:	L2221/A
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.24 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

ENCL-C2.XLS

REVIEW [signature]

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 326

C. HALLAM / CBall

SAMPLE DATE: 5-12-97

LOCATION: B14 AREA 4A/4B DELINEATION OF LOWER WALL/BASEBOARD AREA

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	67
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN/SCAN

= CONTAMINATED AREA

ALL BASEBOARD AREAS VERIFIED < 200 CPM IN AREAS 4A & 4B WITH THE EXCEPTION OF THOSE AREAS NOTED BELOW

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	F5 (4A)	BASE OF WALL (UP TO 6")	150-250 CPM
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
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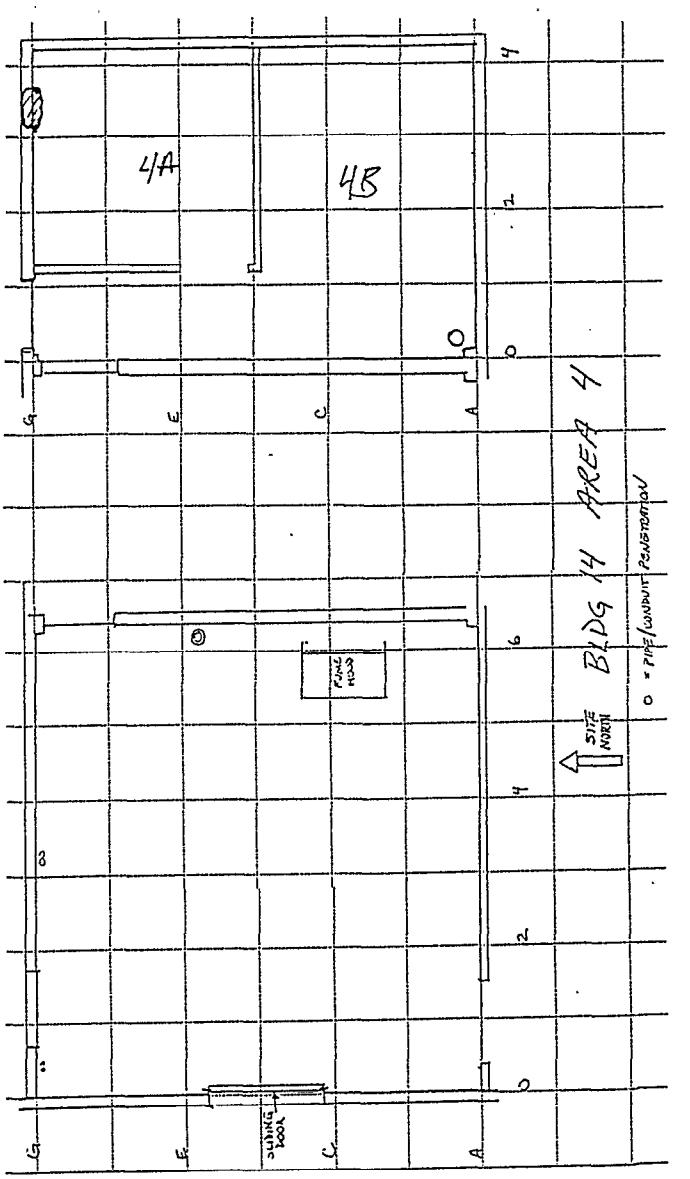

Instrument Model & s/n:	L2221 / D
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.22 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.
SURVEY # 327
C. HALLAM/[illegible]
SAMPLE DATE: 5-12-97
LOCATION: B14 AREA 4 CORE DRILLING/SAMPLING

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	67
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN/SCAN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	FS	TOP OF CORE PRIOR TO DRILLING	70-90 CPM
2	|	SIDE OF CORE (1ST LAYER)	70-90 CPM
3	|	BOTTOM OF CORE (1ST LAYER) 5-12-97	80-100 CPM
4	FO	TOP OF CORE	60-80 CPM
5	|	SIDE OF 1ST LAYER	70-90 CPM
6	|	BOTTOM OF 1ST LAYER	70-90 CPM
7	|	TOP OF 2ND LAYER	70-90 CPM
8	|	SIDE OF 2ND LAYER	70-90 CPM
9	|	BOTTOM OF 2ND LAYER	70-110 CPM
10	↓	TOP OF 0-1' SAMPLE (GRAVEL)	80-120 CPM
11	FS	TOP OF 2ND LAYER	70-90 CPM
12	|	SIDE OF 2ND LAYER	70-90 CPM
13	|	BOTTOM OF 2ND LAYER	70-110 CPM
14	BS	TOP OF 0-1' SAMPLE (GRAVEL)	90-130 CPM
15	|	TOP OF 1'-2' SAMPLE (CLAY)	90-130 CPM
16	|	TOP OF 2'-3' SAMPLE	80-110 CPM
17	↓	TOP OF 3'-4' SAMPLE	80-110 CPM
18			
19			
20			
21			
22			
23			
24			
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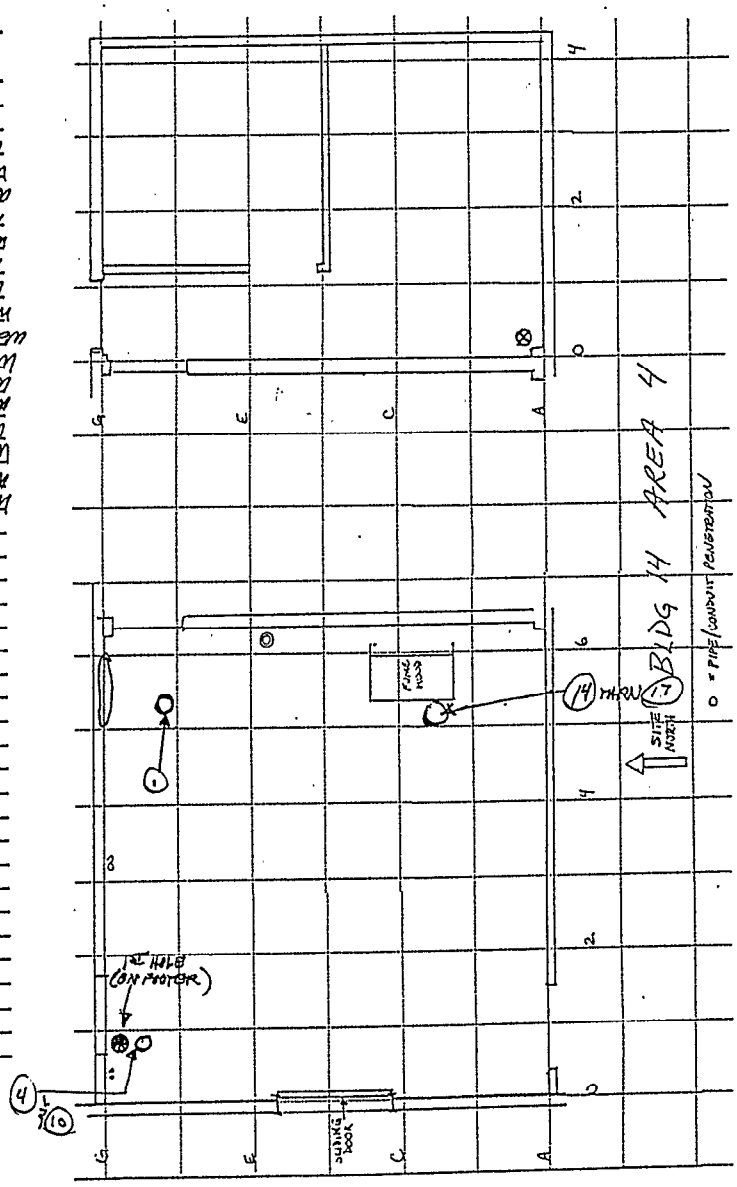

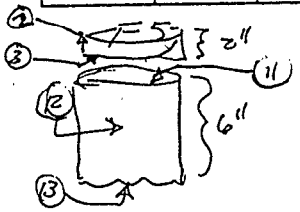

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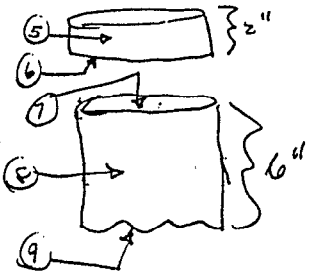

Instrument Model & s/n:	L2221 / D
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.22 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW [illegible]

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 333
C. HALLAM/
SAMPLE DATE: 5-15-97
LOCATION: B14 AREA 4A/4B CORE DRILLING/SAMPLING

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	65
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	1 MIN/SCAN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	D0/D1	TOP OF CORE PRIOR TO DRILLING	60-80 CPM
2		SIDE OF 1ST LAYER	60-80 CPM
3		INSIDE OF 1ST LAYER @ CRACK	60-80 CPM
4		INSIDE OF 1ST LAYER @ CRACK	60-80 CPM
5		BOTTOM OF 1ST LAYER	60-80 CPM
6		TOP OF 2ND LAYER	70-90 CPM
7		SIDE OF 2ND LAYER	70-90 CPM
8		TOP OF BREAK	70-90 CPM
9		BOTTOM OF BREAK	70-90 CPM
10		SIDE OF 2ND LAYER	70-90 CPM
11		BOTTOM OF CORE	80-110 CPM
12	B3	TOP OF CORE PRIOR TO DRILLING	60-80 CPM
13		SIDE OF CORE	60-80 CPM
14		BOTTOM OF CORE	60-80 CPM
15		TOP OF 0-1' SAMPLE	60-80 CPM
16		TOP OF 1-2' SAMPLE	60-80 CPM
17		TOP OF 2-3' SAMPLE	60-80 CPM
18		TOP OF 3-4' SAMPLE	60-80 CPM
19	D0/D1	TOP OF 0-1' SAMPLE	70-90 CPM
20		TOP OF 1-2' SAMPLE	70-90 CPM
21		TOP OF 2-3' SAMPLE	70-90 CPM
22		TOP OF 3-4' SAMPLE	70-90 CPM
23			
24			
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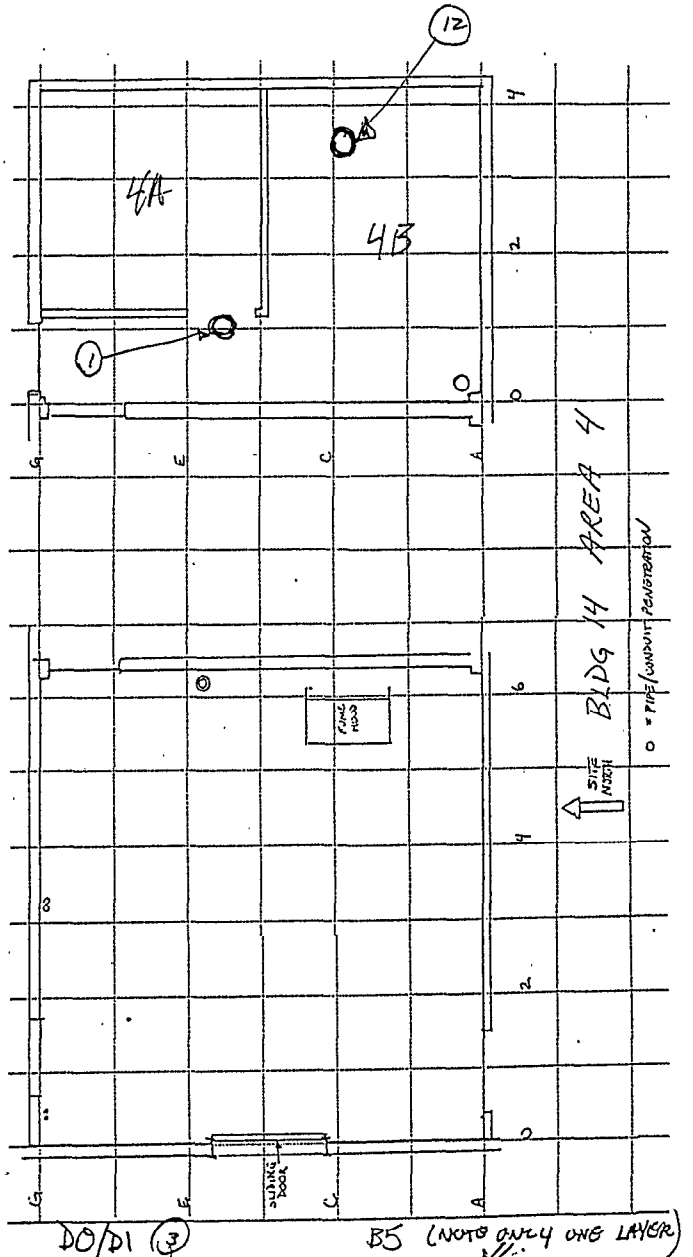


Instrument Model & s/n:	L2221/D
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90
Detector Area	cm2

ENCL-C2.XLS

REVIEW

APPENDIX B-3

DELINEATION SURVEYS FOR LARGE HALLWAY

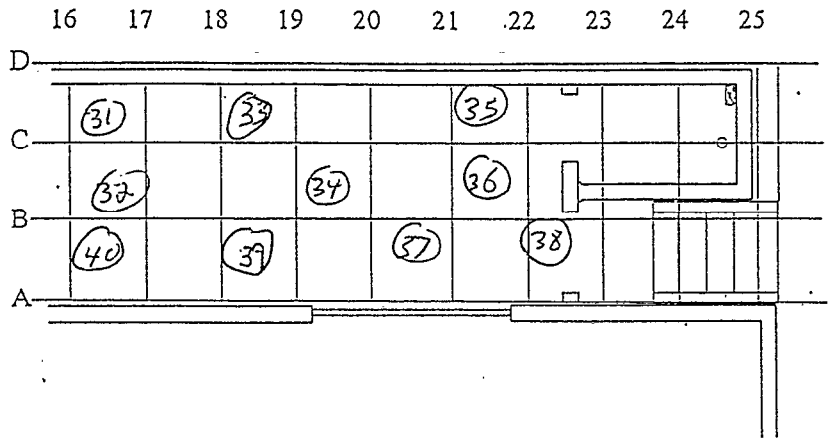
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

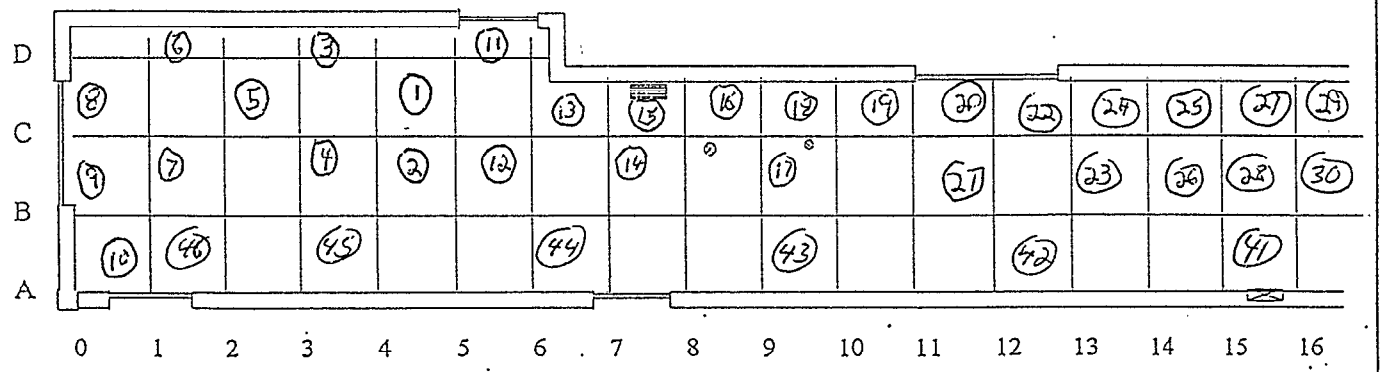
Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 3-10-97 @ 1015 / Tech M. Sligo	Instruments / sn Ludlum 2221 B BKD. 60 cpm
Location / Purpose Large Hall way. under floor	Survey # 057 RWP # 01
Title: FREE Release of Contrl Zone.	



BLDG 14

Large Hallway



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	under Floor	0	-0.6	40	-78.6	8	S	under Flor	0	-0.6	66	14.3
2	S	Tile IN	0	-0.6	71	32.1	9	S	Tile on	0	-0.6	70	28.6
3	S	Large Hall way.	0	-0.6	71	32.1	10	S	Floor.	0	-0.6	53	-32.1
4	S	on floor.	0	-0.6	61	-3.6	11	S		1	2.4	60	-7.1
5	S		0	-0.6	51	-39.3	12	S		0	-0.6	58	-14.3
6	S		0	-0.6	67	17.9	13	S		0	-0.6	58	-14.3
7	S		0	-0.6	74	42.9	14	S		0	-0.6	41	-75

Comments: Large area smears Taken IN and outside Controle Zone. No detectable activity. SEE CONTINUATION SHEET.

		BKG	EFF	MDA
Scaler S/N Ludlum 2929 I				
CT = 1 min.	Alpha:	.2	-33	
Tech M. Sligo	Beta:	62	-28	

Review

ION TECHNOLOGY, INC.

Bldg. 14, Praxair Site

RADIOLOGICAL SURVEY CONTINUATION FORM

Date / Time: 3-10-97 @ 1100	Tech.: M. Tejo	Instruments/sn: Ludlum 2221 B
Location / Purpose: LARGE Hall way. under Floor Tile. For Release of a C.S.C.A.		Survey No.: 057 RWP No.: 01

Loc.	Type	Description	Gross	α DPM	Gross	β DPM	Loc.	Type	Description	Gross	α DPM	Gross	β DPM
15	S	UNDER Floor tile	0	-0.6	81	67.8	39	S	(Outside) Chem	0	-0.6	71	32.1
16	S	on CONCRETE Floor.	0	-0.6	80	64.2	40	S	Zone.	0	-0.6	63	3.6
17	S		0	-0.6	63	3.6	41	S		0	-0.6	68	21.4
18	S		0	-0.6	68	21.4	42	S		0	-0.6	70	28.6
19	S		0	-0.6	57	-17.9	43	S		0	-0.6	71	32.1
20	S		0	-0.6	63	3.6	44	S		0	-0.6	74	42.9
21	S		0	-0.6	71	32.1	45	S		0	-0.6	62	0
22	S		0	-0.6	75	46.4	46	S		0	-0.6	58	-14.3
23	S		0	-0.6	75	46.4							
24	S		0	-0.6	55	-25							
25	S		0	-0.6	59	-17.9							
26	S		0	-0.6	56	-21.4							
27	S		1	2.4	54	-28.6							
28	S		0	-0.6	69	25							
29	S		0	-0.6	62	0							
30	S		0	-0.6	61	-3.6							
31	S		0	-0.6	55	-25							
32	S		0	-0.6	47	-53.6							
33	S		0	-0.6	53	-32.1							
34	S		0	-0.6	63	3.6							
35	S		0	-0.6	57	-17.9							
36	S		0	-0.6	71	32.1							
37	S		0	-0.6	71	32.1							
38	S		0	-0.6	63	3.6							

Comments:

RONALD

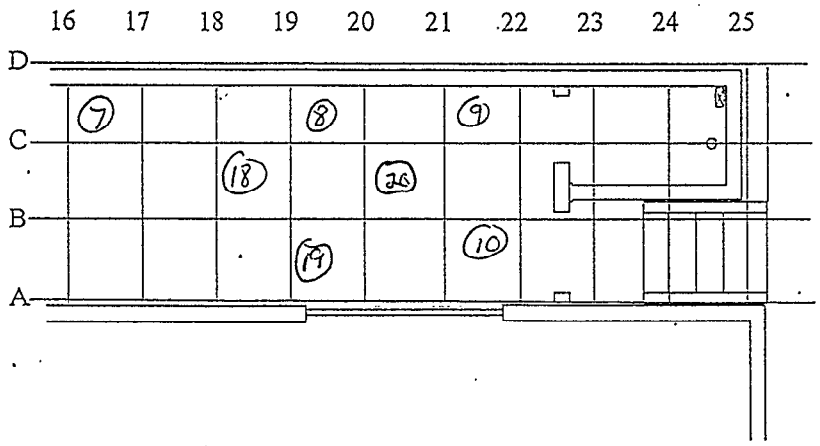
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

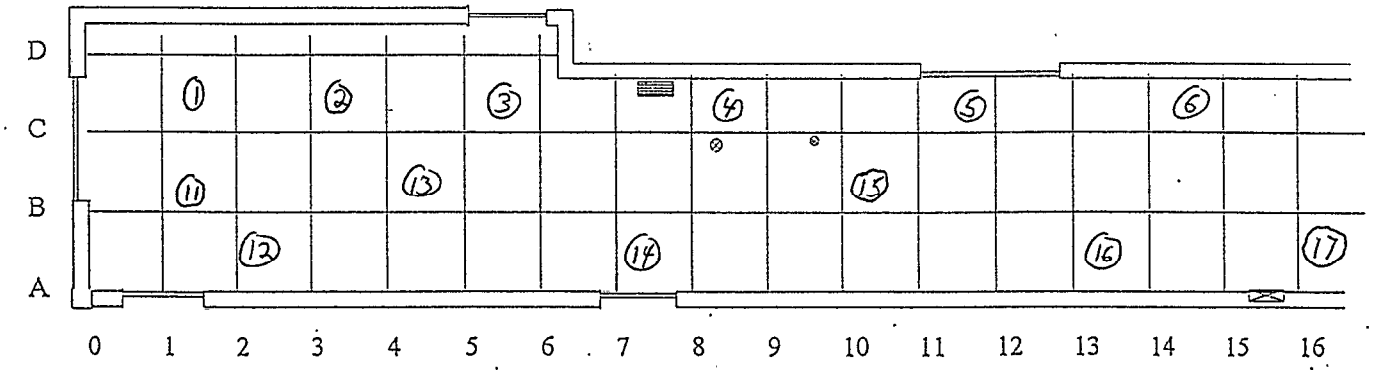
Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 3-6-97 @ 0900	Tech M. Sigo	Instruments / sn Ludlum 2221 (B)	
Location / Purpose Large Hall way. under floor Tile.		Survey # 058	RWP # 01
PREP. for DeCon			



BLDG 14
Large Hallway



Loc	Type	Description	Gross	A DPM	Gross	Beta DPM	Loc	Type	Description	Gross	A DPM	Gross	Beta DPM
1	S	on Tile	0	-0.6	60	-20	8	S	on Tile	1	2.4	69	10
2	S	Floor, in Clean	0	-0.6	55	-36.7	9	S	Floor, in Clean	0	-0.6	54	-40
3	S	Zone.	0	-0.6	51	-50	10	S	Zone.	2	2.4	61	-16.7
4	S		0	-0.6	59	-23.3	11	S	under floor	0	-0.6	71	16.7
5	S		0	-0.6	57	-30	12	S	Tile in	0	-0.6	53	-43.3
6	S		0	-0.6	63	-10	13	S	C.S.C.A	0	-0.6	68	6.7
7	S	↓	0	-0.6	65	-3.3	14	S	↓	0	-0.6	63	-10

Comments:	Scaler S/N Ludlum 2929	BKD	EFF	MDA
Large area Smears Taken in and out of Zones. No Detectable activity Noted with Ludlum 2221 (B). 0 = Swipe Locations.	CT = 1 Alpha:	-2	-34	14
	Tech M. Sigo Beta:	66	-30	135

Review

ION TECHNOLOGY, INC.

Bldg. 14, Praxair Site

RADIOLOGICAL SURVEY CONTINUATION FORM

Date / Time: 3-6-97 @ 0900	Tech.: M. Vigo	Instruments/sn: Ludlum 2229 SN 91234 / RGBC 43-10-1
Location / Purpose: Large Hall way. Removal of floor Tile. Prep. For Decon.		Survey No.: 058 RWP No.: 01

Loc.	Type	Description	Gross	α DPM	Gross	β DPM	Loc.	Type	Description	Gross	α DPM	Gross	β DPM
15	S	under floor	0	-0.6	46	-66.7							
16	S	Tile in C.S.A.	1	2.4	48	-60							
17	S		1	2.4	64	-6.7							
18	S		0	-0.6	72	20							
19	S		1	2.4	66	0							
20	S		0	-0.6	60	-20							

Comments:

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY 059

#059

SAMPLE DATE: 3-11-97
LOCATION: **BLDG 14 Large Hallway**

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

SPOT DELINEATION SURVEY
WALL SURVEY: FROM ~~FROM~~ 1.5' TO 6.5' HIGH ON WALL

TOTAL BACKGROUND COUNTS	2478 cpm
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS (CPM β/γ)
1	SEE MAP	PAINTED BRICK	1200
2	↓	PAINTED BLOCK	875
3		↓	873
4			978
5		PAINTED TERRACOTTA TILE	1184
6		↓	1272
7			1288
8		PAINTED STEEL DOOR	788
9		PAINTED TERRACOTTA TILE	1214
10		↓	1398
11			1316
12			1340
13		PAINTED BLOCK	1074
14		~~PAINTED STEEL DOOR~~	1038
15		~~PAINTED BRICK~~	1148
16		PAINTED STEEL DOOR	826
17		* PAINTED BRICK	5422
18		↓	2762
19			1644
20			1552
21		STEEL DOOR	668
22		PAINTED BRICK	1658
23			1590
24		↓	1776
25		STEEL DOOR	930
26		PAINTED BRICK	1639
27	↓	PAINTED STEEL DOOR	652
28			
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34		N	
35		A	
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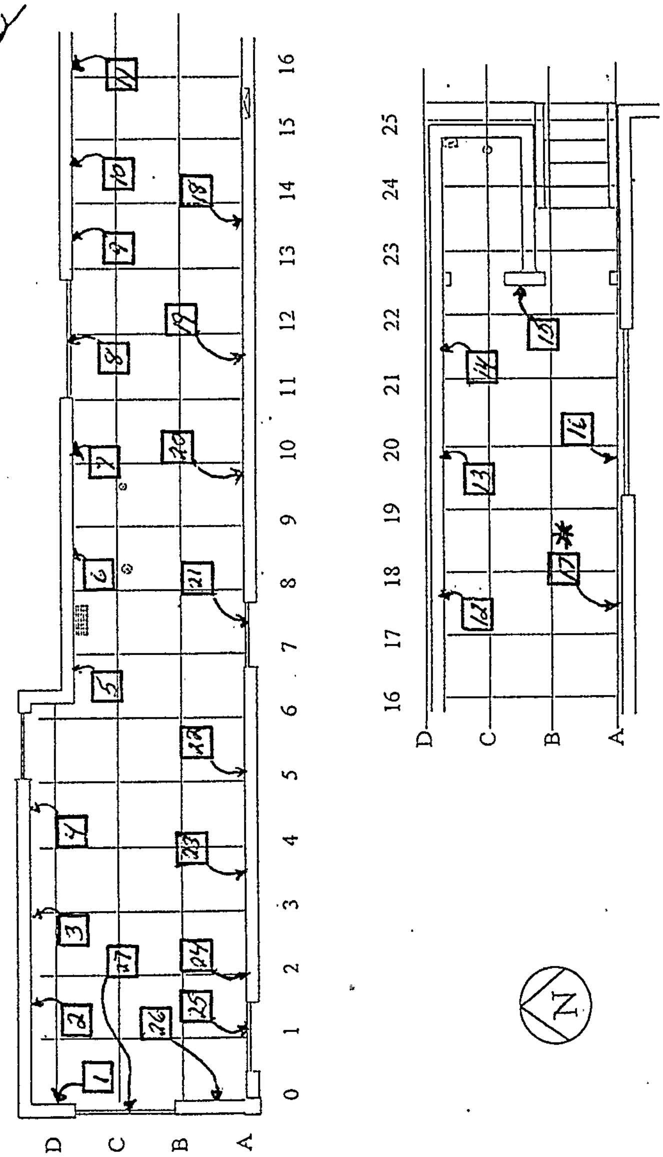

* # [17] HOT SPOT = 437 β/γ (INST. C/L2221) cpm (1 MIN COUNT) @ APPROX. 1 METER FROM FLOOR. USING INST. (B) L2221 (.24 EFF.) (76 cpm β/γ BKGKD.).

Instrument Model & s/n:	(J) L2221 w/43-37 (FLOOR MONITOR)
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90, .20 EFF.
Detector Area	cm2 = 425

REVIEW [signature]

[signature] 3-11-97

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 060

SAMPLE DATE: 3-11-97
LOCATION: BLDG 14 Large Hallway
WALL SURVEY

SPOT DELINEATION SURVEY
DIRECT PROBE

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	76
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

CPM BY

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
		UNDER MOLDING (37)	
1	SEE MAP	SOUTH WALL ~~UPTO 1 METER HIGH~~	150 - 230 cpm
2		UNDER MOLDING @ FLOOR	218
3		UNDER MOLDING @ FLOOR	158
4		UNDER MOLDING @ FLOOR	311
5		UNDER MOLDING @ FLOOR	739
6		@ VERTICAL OF BEAM UPTO 1'	800
7		UNDER MOLDING @ FLOOR	1400
8		UPTO 1' HIGH ON WALL	1200 - 2600
9		UNDER MOLDING @ FLOOR	1500
10		UNDER MOLDING @ FLOOR	2,500
11		UNDER MOLDING @ FLOOR	387
12		UNDER MOLDING @ FLOOR	643
13		UNDER MOLDING @ FLOOR	541
14		UNDER MOLDING @ FLOOR	358
15		@ VERTICAL OF BEAM UPTO 1'	1k
16		UNDER MOLDING @ FLOOR	391
17		UNDER MOLDING @ FLOOR	1k
18		ENTIRE GRID ON WALL	210 - 2500
19		@ BRICK BESIDE DOOR	573
20		STEEL DOOR	53
21		UPTO 1 METER HIGH	1057
22		ENTIRE GRID ON WALL	150 - 1200
23		UNDER MOLDING @ FLOOR	231
24		NORTH WALL UNDER MOLDING	693
25			109
26			131
27			150
28			136
29			121
30			92
31			160
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38			
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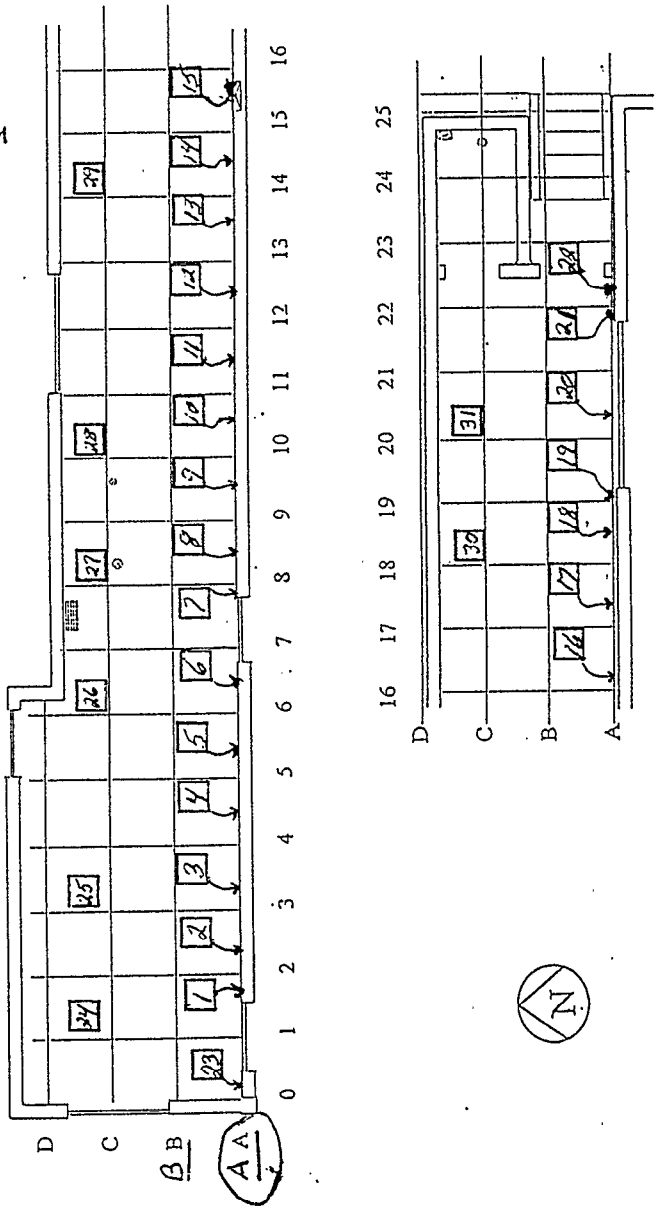

Instrument Model & s/n:	(B) L7221
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .24
Detector Area	cm2 = 15.5

ENCL-C2.XLS

REVIEW:

3-11-97

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 3-10-97

LOCATION: BLDG 14 Large Hallway
Spot. Delineation Survey of Floor. after Floor Tile Removed.
Survey #071

RADIATION MEASUREMENT: Beta-Gamma
~~RESULTS REPORTED UNITS: dpm per 100cm2~~ M.Y
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	64
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1		See Grid Map for activity locations. All Readings are in C.P.M. / 15.5 Cm² Probe B.Y. Note: Grid Activity ranges between numbers.	~~B~~ cpm
2			
3			
4			
5			
6			
7			
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9			
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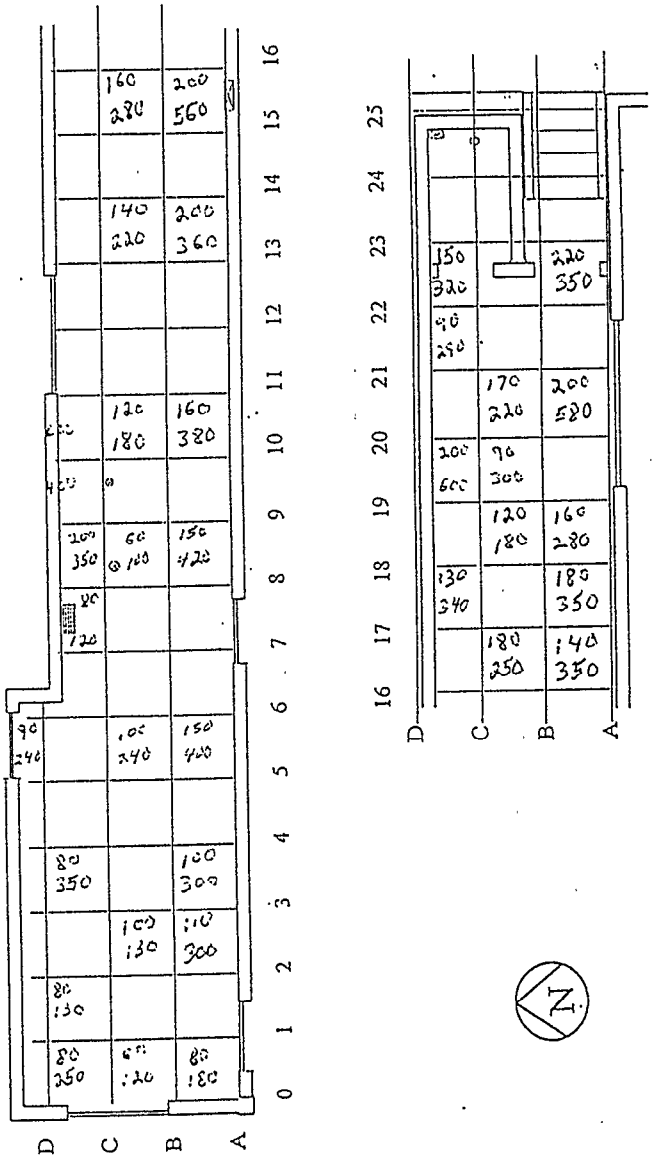

Instrument Model & s/n:	Ludlum 2221
Detector Model & s/n:	B
Calibration Data:	
Efficiency	[redacted] cpm / dpm based on S/Y90
Detector Area	15.5 cm2

H.P. W. 3/98

ENCL-C2.XLS

REVIEW

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

077

SAMPLE DATE: 3-12-97
LOCATION: BLDG 14 Large Hallway

DELINEATION SURVEY OF FLOOR AREA

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	SEE BELOW
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

NOTE: # / # = 2X2 NaI cpm / FLOOR MONITOR cpm

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1		SEE GRID MAP	
2		ALL READINGS ARE IN	
3		GROSS CPM USING	
4		2X2 NaI & 43-37 FL. MONITOR	
5		DETECTORS.	
6			
7			
8			
9			
10			
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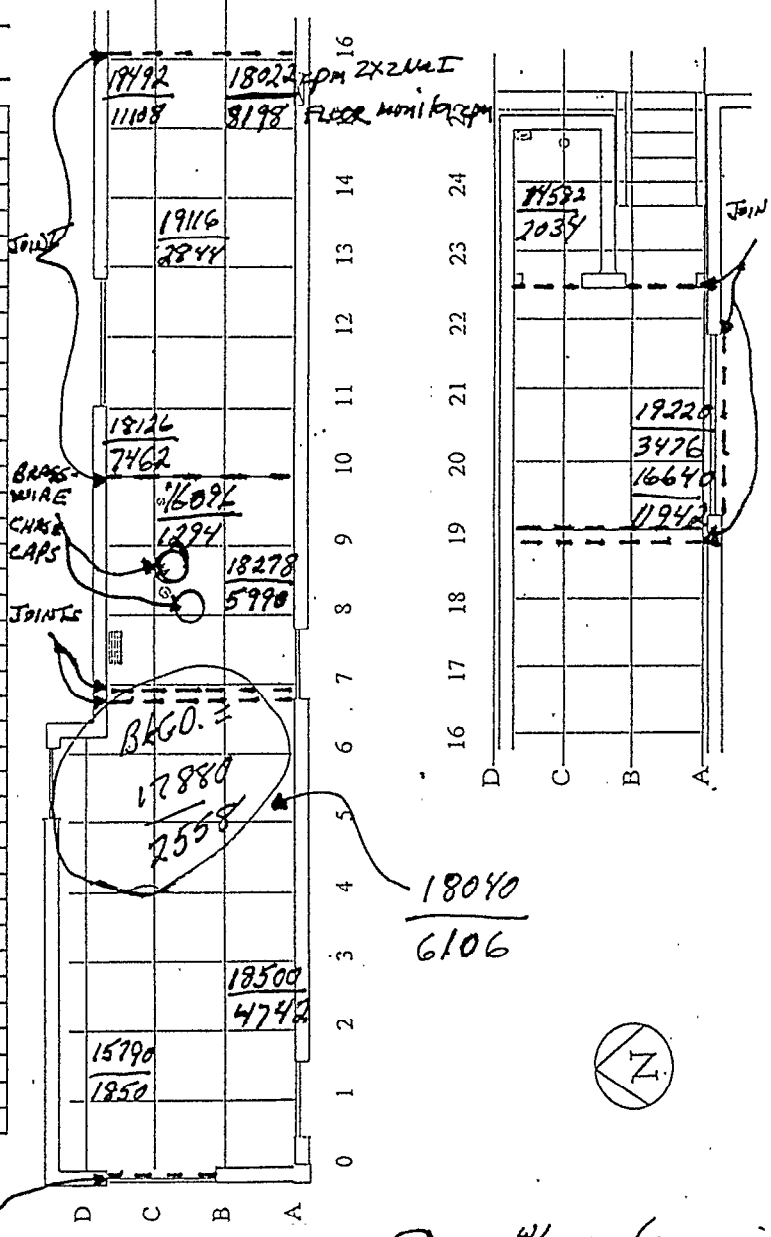


FLOOR MONITOR: INST (J) L2221 W/43-37 (EFF. = .20)
2X2 NaI: INST (E) L2221 W/44-10

Instrument Model & s/n:	(J) L2221 W/43-37
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90
Detector Area	425 cm2

ALSO INST. (E) L2221 W/44-10

3-12-97

REVIEW

HILBERT ASSOCIATES, INC.

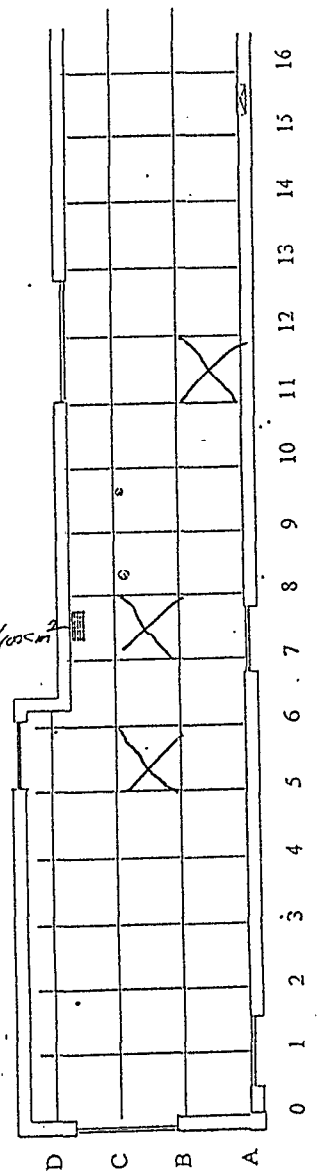
DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

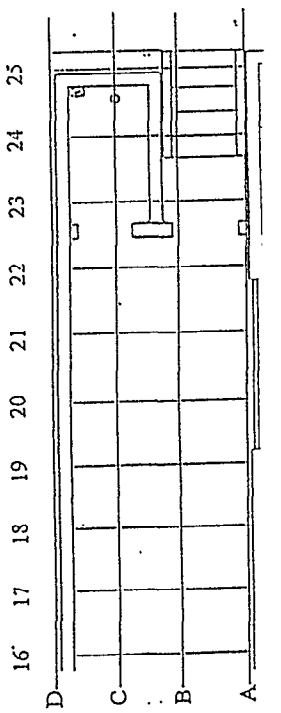
SAMPLE DATE:
LOCATION: BLDG 14 Large Hallway
Survey # 273
corebore / DELINEATION

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	50
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE GRID.	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS C.P.M.
1			
2	A-11	Concrete Core (Top)	80-90
3		(Sides)	80-90
4		Bottom	80-90
5		Gravel Bottom	80-140
6		Sample #1 SURFACE	80-90
7		#2 1'-2'	80-90
8		#3 2'-3'	80-90
9		#4 3'-4'	80-90
10		Large Area Swipe	
11		Taken in C.S.C.P.	
12		No Detectable	
13		Activity found.	
14		AREA Was Posted.	
15			
16	B-7	Concrete Core	
17		(Top)	60-80
18		Sides	60-90
19		Bottom ≈ 6" Thick	300
20		Bottom west wall	
21		of Trench.	250-350
22		Smears	< 1K dpm/100cm²
23		only one Sample	
24		Taken. All gravel	
25		The Core Tool	
26		Doesn't fit in	
27		Hole.	
28			
29	B-5	Top of Core	50-80
30		Sides	60-80
31		Bottom	80-100
32		Soil at gravel	80-100
33		Surface Sample	60-80
34		1'-2'	60-80
35		2'-3'	60-80
36		3'-4'	60-80
37		Large Area Smears	
38		Taken by CSCP.	
39		No Detectable	
40		activity.	





N

H.P. 111. 3490

Instrument Model & s/n:	Ludlum 222-1 B
Detector Model & s/n:	
Calibration Date:	
Efficiency [redacted] cpm / dpm based on S/Y90	= 21
Detector Area [redacted] cm2	15.5

REVIEW

HILBERT ASSOCIATES, INC.

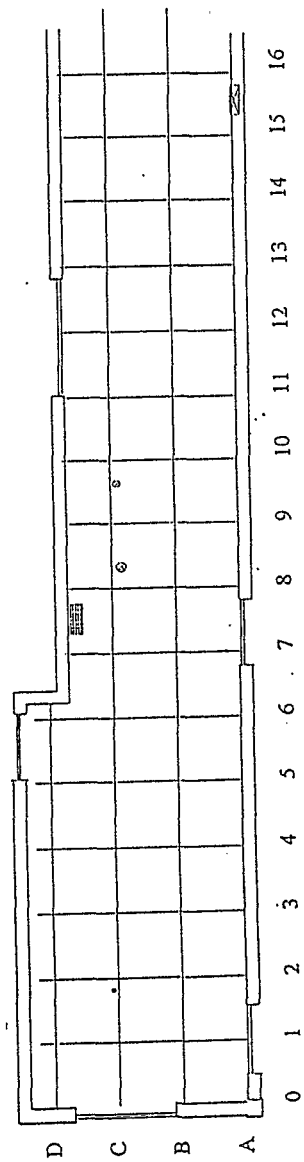
DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

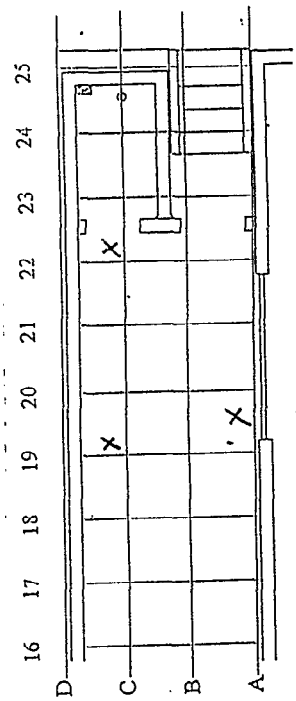
SAMPLE DATE: 4-9-97
LOCATION: BLDG 14 Large Hallway
Survey # 274

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	76
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS C.P.M
1	C-19	Floor	80-100
2		3" Concrete Core	60-80
3		SAND UNDER CONCRETE	60-80
4		CONCRETE UNDER SAND	400-700
5		WEST WALL OF TRENCH	200-300
6		A SAND SAMPLE TAKEN	
7		AT 3" UNDER CONCRETE.	
8		THE CONCRETE SURFACE	
9		UNDER THE SAND	600-700
10		THREE SAMPLES.	
11		TAKEN @ 1'-2'	
12		@ 2'-3'	
13		@ 3-4'	
14			
15	A-19	Floor Surface	100-300
16		1" Concrete	5-10 K
17		(ON BOTTOM SIDE)	
18		SIDE of CORE	60-80
19		TOP of NEXT LEVEL	10K-12K
20		Side of SURE	60-80
21		BOTTOM of CORE	60-80
22		Top of Rubble	150-200
23		SAMPLE SURFACE	
24		" 1'-2'	
25		" 2-3'	
26		" 3-4'	
27			
28	C-22	Floor Surface	80-100
29		Side of core	60-80
30		Bottom	60-80
31		SAMPLE SURFACE	
32		" 1'-2'	
33		2'-3'	
34		3'-4'	
35			
36		Large Area Smears	
37		Taken in These	
38		Grids. No Detectable	
39		activity found.	
40			





X = SAMPLE LOCATIONS

H.P. M. Zigo

Instrument Model & s/n:	Ludlum 2221 B
Detector Model & s/n:	44/9
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 .20
Detector Area	cm2 15-5

REVIEW

ENCL-C2.XLS

ERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

IPLE DATE: 4-10-97
CATION: BLDG 14 Large Hallway
Survey # 276

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	67
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
	Grid		C.P.M.
1	C-22	6" Core	60-80
2		Sample Surface	
3		Grout	60-80
4			
5	C-16	Core at Joint	
6		The Core Split	
7		in Half.	
8		Top of Core	1000
9		Bottom	100-150
10		Surface	60-80
11		Rubber Expansion	
12		Joint = 4"	400-800
13		Bottom of Rubber	
14		Joint	180-200
15			
16		Sampled Surface	60-80
17		1-2'	60-80
18		2-3'	60-90
19		3-4	60-80
20		Direct Rock	
21		in Soil at Bottom	
22		of Core	100-140
23			
24			
25			
26			
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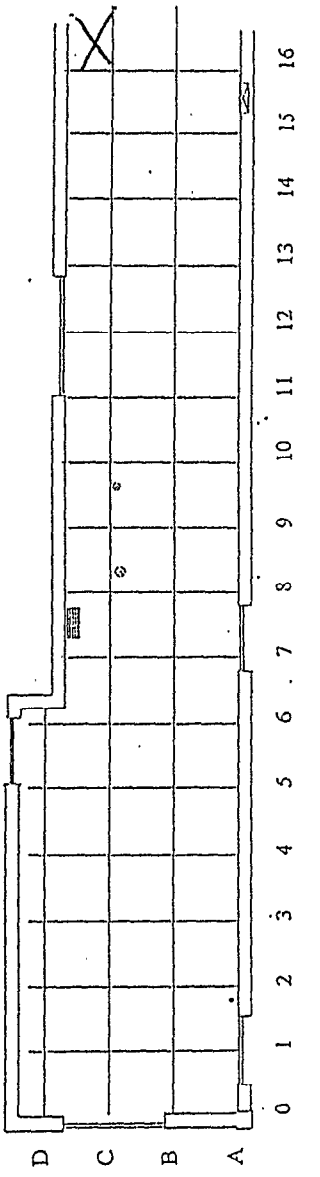

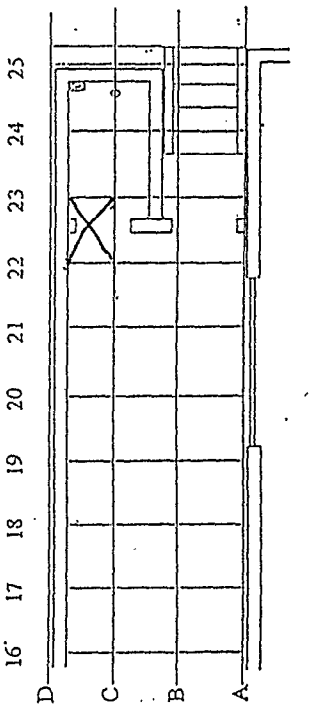

H.P. M. Jojo

Instrument Model & s/n:	Ludlum - 2221 B
Detector Model & s/n:	
Calibration Date:	
Efficiency:	cpm / dpm based on S/Y90 .20
Detector Area	cm2 15.5

Review

HILBERT ASSOCIATES, INC.
SURVEY # 282
C. HALLAM / C. Heller

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 4-16-97
LOCATION: BLDG 14 Large Hallway
CORE DRILLING / SUBSURFACE SAMPLING

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	77
BACKGROUND COUNT TIME (MIN)	/ MIN
SAMPLE COUNT TIME (MIN)	N/A - SCAN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	A22	TOP OF CORE	100 - 140 cpm
2		SIDE OF CORE	80 - 110 cpm
3		BOTTOM OF CORE	80 - 110 cpm
4		TOP OF SURFACE SAMPLE	90 - 120 cpm
5		1-2' SAMPLE (TOP)	80 - 120 cpm
6		TOP OF 2'-3' SAMPLE	100 - 130 cpm
7		TOP OF 3'-4' SAMPLE	100 - 130 cpm
8			
9			
10			
11			
12			
13			
14			
15			
16			
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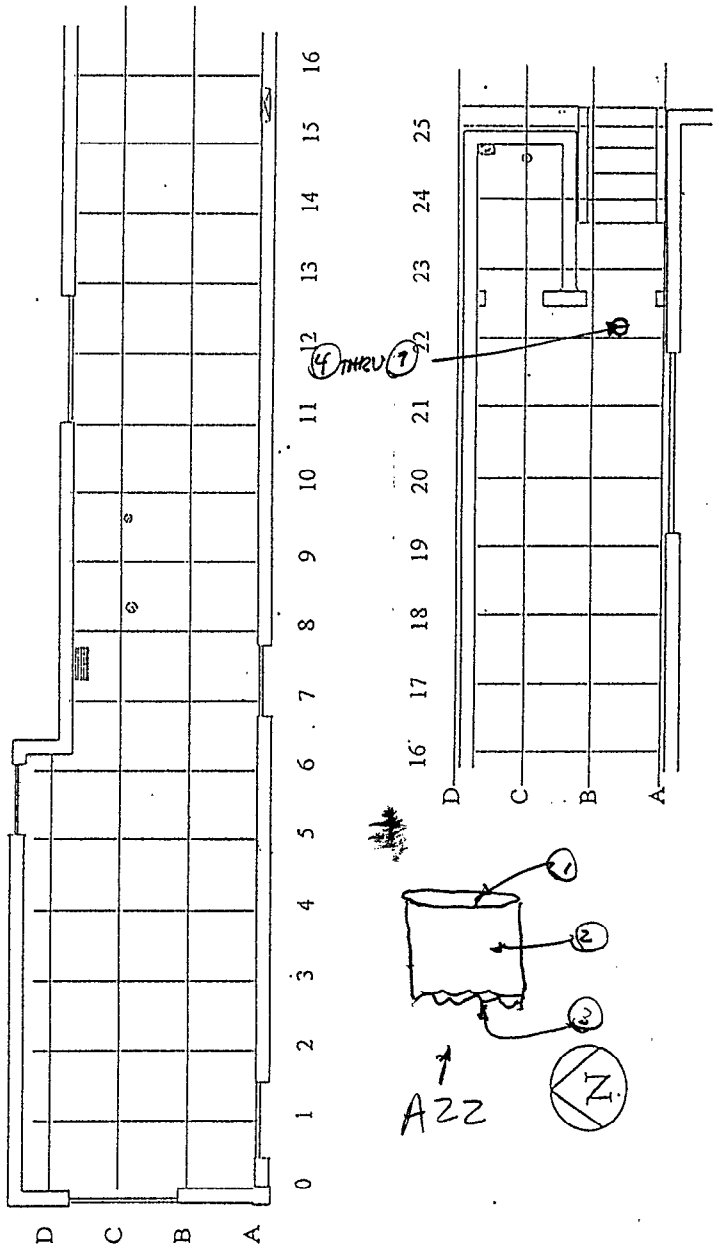

Instrument Model & s/n:	L2221 / D
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.21 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 2804 283
C. HAUCAM / C. Hall
SAMPLE DATE: 4-15-97
LOCATION: BLDG 14 Large Hallway

CORE SAMPLE DRILLING / SUBSURFACE SAMPLING

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	75
BACKGROUND COUNT TIME (MIN)	1 MIN
SAMPLE COUNT TIME (MIN)	N/A - SCAN

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	B7	5" CONCRETE CORE * TOP	120-170 CPM
2		UNDER SIDE	70-110 CPM
3		TRENCH SIDE	230-400 CPM
4		BOTTOM	70-90 CPM
5		1-2' APPROX TOP OF GRAVEL UNDER MONOLITH	110-160 140 CPM
6		TOP OF 2-3' SAMPLE	80-120 CPM
7		TOP OF 3-4' SAMPLE	80-110 CPM
8	C3	TOP OF CORE PRIOR TO DRILLING	100-140 CPM
9		SIDE OF CORE BELOW 1"	60-80 CPM
10		BOTTOM OF CORE	60-80 CPM
11		TOP OF SURFACE SAMPLE	80-110 CPM
12		TOP OF 1' TO 2' SAMPLE	80-110 CPM
13		TOP OF 2' TO 3' SAMPLE	80-110 CPM
14		TOP OF 3' TO 4' SAMPLE	70-100 CPM
15	CO	TOP OF CORE PRIOR TO DRILLING	80-100 CPM
16		SIDE OF CORE	70-90 CPM
17		BOTTOM OF CORE	70-90 CPM
18		TOP OF SURFACE SAMPLE	~~70-90 CPM~~ 70-90 CPM
19		TOP OF 1-2' SAMPLE	~~70-90 CPM~~ 70-90 CPM
20		TOP OF 2-3' SAMPLE	70-90 CPM
21		TOP OF 3'-4' SAMPLE	70-100 CPM
22			
23			
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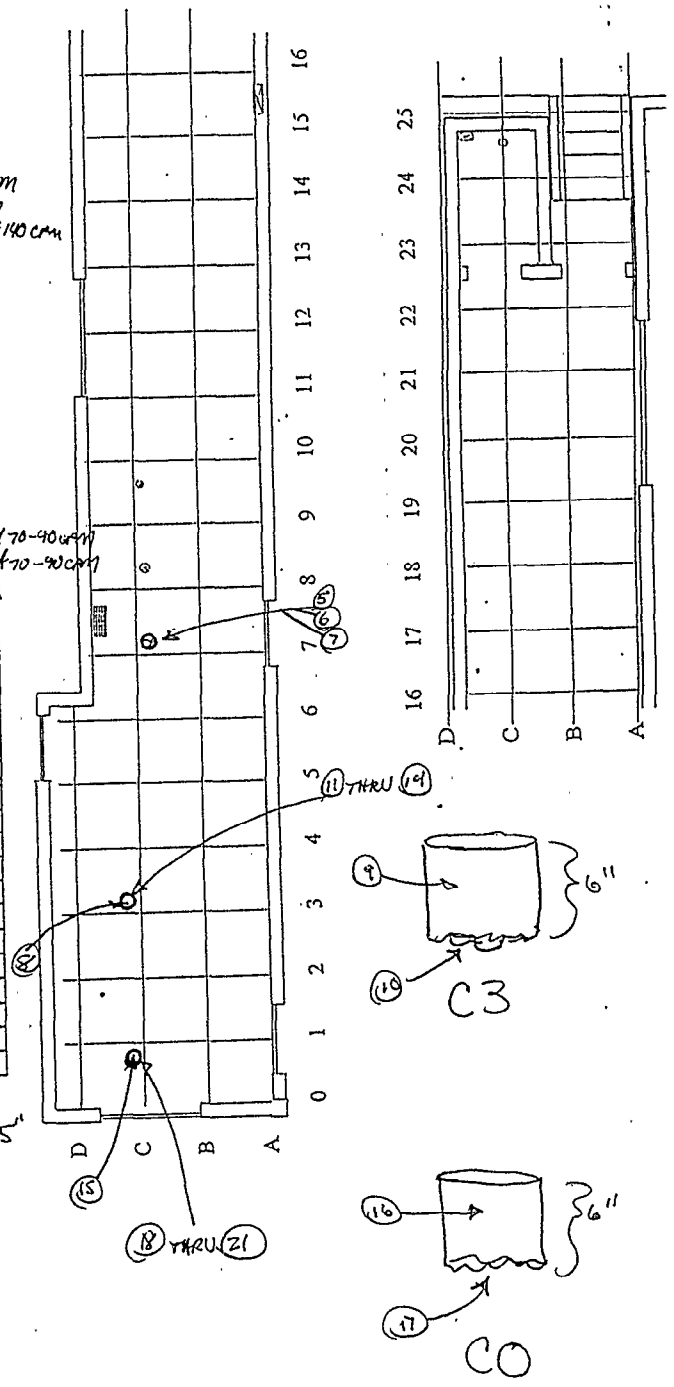

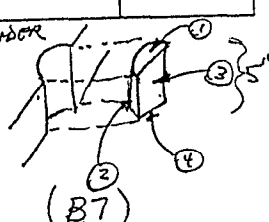

* FROM EASTWALL OF TRENCH UNDER SLAB

Instrument Model & s/n:	L2221/D
Detector Model & s/n:	
Calibration Date:	
Efficiency *	0.21 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW

ENCL-C2.XLS

SURVEY 340

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

#340

SAMPLE DATE: 5/12, 5/13, 5/14, 5/15 - '97
LOCATION:
- PRAXAIR SITE
BLDG. #14
LARGE HALLWAY:
OVERHEAD DELINEATION

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	65
BACKGROUND COUNT TIME (MIN)	1 MIN.
SAMPLE COUNT TIME (MIN)	1 MIN.

BB

SAMPLE #	GRID LOCATION CODE	OVERHEAD LOCATION DESCRIPTION	GROSS CPM GROSS SAMPLE COUNTS
1	B-16	INSULATED PIPE	250
2	B-16	↓	280
3	A-16	↓	220
4	B-6	1" METAL PIPE	350
5	A-6	↓	400
6			
7			
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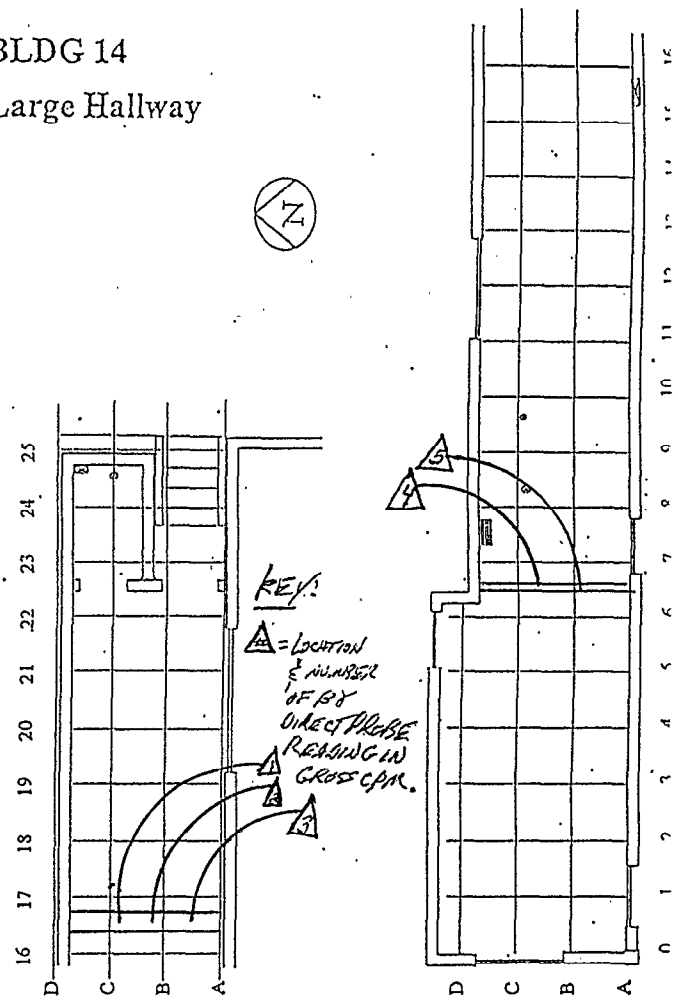
BLDG 14
Large Hallway



* NOTE: AREA REMAINING WITHIN OVERHEAD (PIPE CHASES, CONDUIT, POWER BUSS, & STRUCTURAL STEEL) ALL LESS THEN 5K DPM/100 cm² BY DIRECT PROBE.

Instrument Model & s/n:	(B) L2221 w/44-9
Detector Model & s/n:	
Calibration Date:	20
Efficiency	1.25 cpm / dpm based on SrY90
Detector Area	cm2

5-15-97
William W.

ENCL: G2XLS

REVIEW

SURVEY # 358

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 5-21-97
LOCATION: PRAXAIR SITE
L. HALLWAY
OVER HEAD DELINEATION
PAINT CHIP COMP SURVEY,
PRE & POST OF SAMPLE SURFACE
@ I BEAM VERT. SURFACE.
I BEAM @
OVER HEAD

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scalar measurements

TOTAL BACKGROUND COUNTS	74
BACKGROUND COUNT TIME (MIN)	1 min.
SAMPLE COUNT TIME (MIN)	1 min.

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS PRE	POST
1	B-14	4"x4" VERT. @ I BEAM	141	132
2	A-12		136	121
3	A-1		145	130
4				
5				
6				
7				
8				
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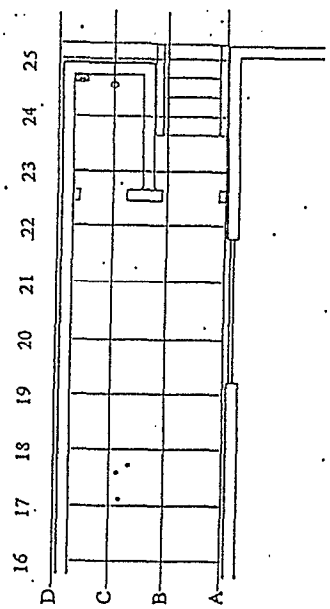
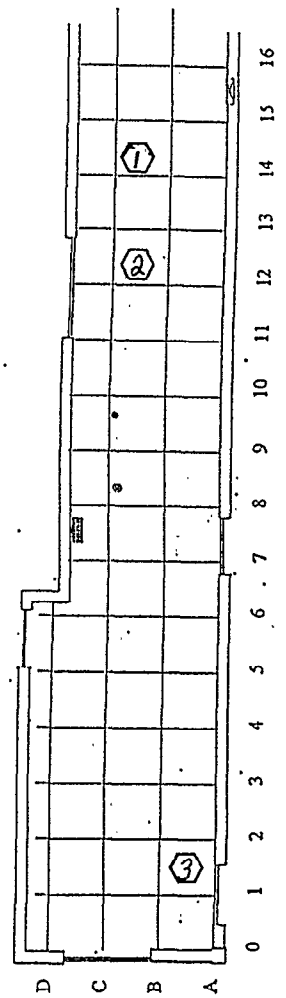
BLDG 14
Large Hallway





5-21-97
W.

Instrument Model & s/n:	⑬ L2221 w/44-9
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 = .20
Detector Area	cm2 = 15.5

REVIEW

ENCL-C2.XLS

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SAMPLE DATE: 5-19-97
LOCATION: Bld-14 Trafair
Large Hallway
Delineation
Survey # 375

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scaler measurements

TOTAL BACKGROUND COUNTS	58	
BACKGROUND COUNT TIME (MIN)	1	
SAMPLE COUNT TIME (MIN)	1	

SAMPLE #	LOCATION CODE GRID	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	B-8	Floor	80 CPM
2	A-10	Floor	100 CPM
3	B-16	Floor	250 CPM
4	A-17	Floor	150 CPM
5	C-17		220 CPM
6	B-20		150 CPM
7	A-12	WALL JOINT	300 CPM
8	A-14	WALL JOINT	200 CPM
9	A-18	WALL JOINT	1200 CPM
10	C-15	WALL JOINT	300 CPM
11			
12			
13		All Test Spots above	
14		were decon'ed to Less	
15		Than 5000 DPM/100cm² BY.	
16		Note: Some areas	
17		were Jackhammered to	
18		see if an overcoat of	
19		concrete was there.	
20		No overcoat was found	
21		in the Test Spots	
22		above.	
23			
24			
25			
26			
27			
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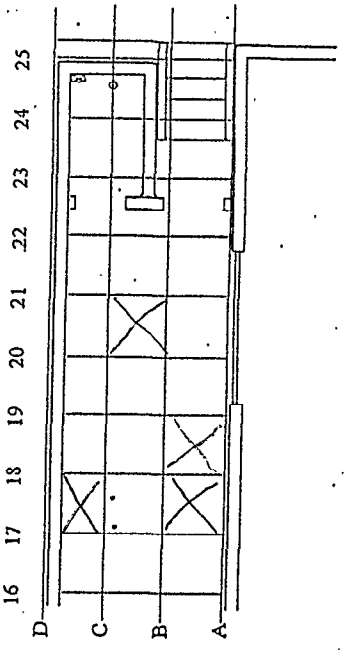
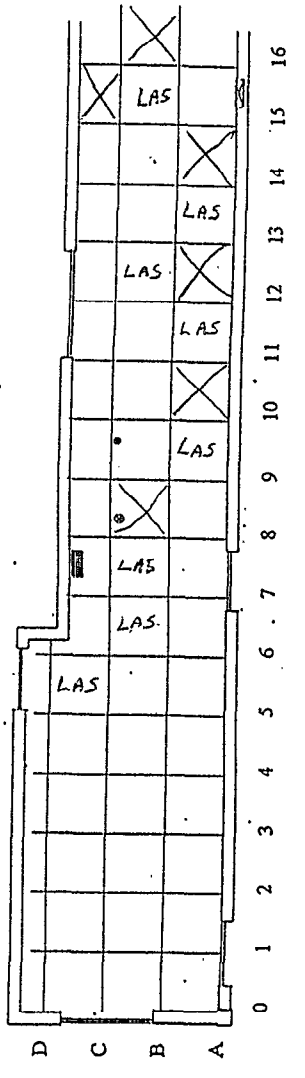
BLDG 14

Large Hallway





NOTE LAS = Large Area Smears.
No detectable activity found on all LAS.

Instrument Model & s/n:	Ludlum 2221 "B"
Detector Model & s/n:	
Calibration Date:	
Efficiency	cpm / dpm based on S/Y90 - 21
Detector Area	cm2 15.5

H.P. M. 3/90

REVIEW

HILBERT ASSOCIATES, INC.

SURVEY #642

G. HALLAM / C. Adle

SAMPLE DATE: 8-12-97

LOCATION: B14 LARGE HALL

SAMPLE SURVEY OF TRENCH

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scalor measurements

TOTAL BACKGROUND COUNTS	62
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	C19	BETWEEN SLABS (PRIOR TO SAMPLING)	280 CPM
2	↓	BETWEEN SLABS (AFTER SAMPLING)	250
3	↓	TOP OF PETRIE (UNCOVERED)	110
4	B19	BETWEEN SLABS (PRIOR TO SAMPLING)	430
5	↓	BETWEEN SLABS (AFTER SAMPLING)	400
6	↓	TOP OF MARINELLI (UNCOVERED)	320
7			
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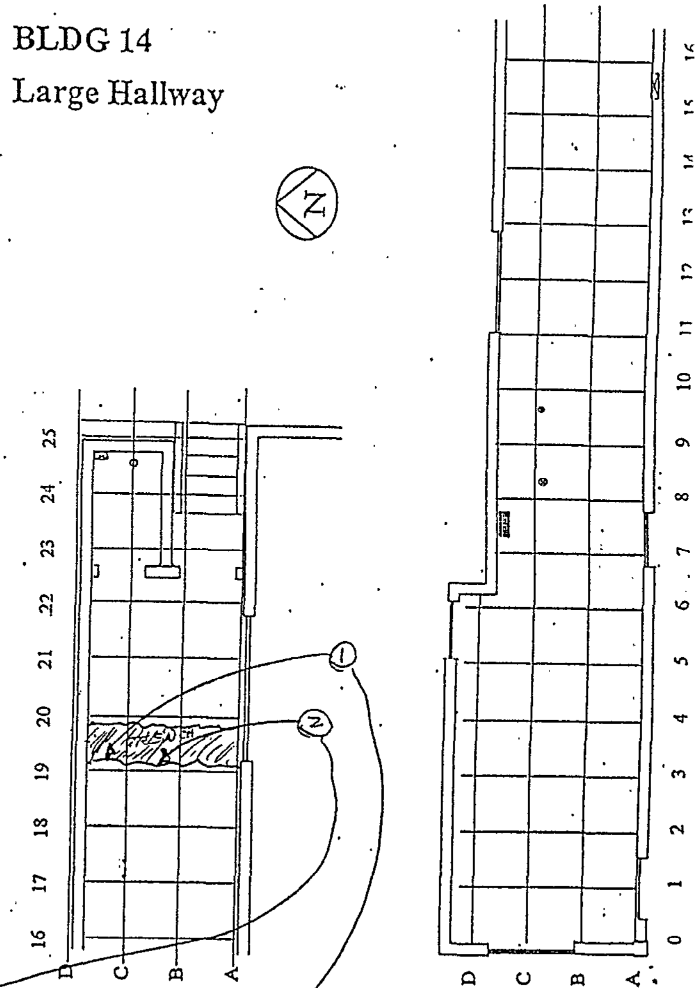
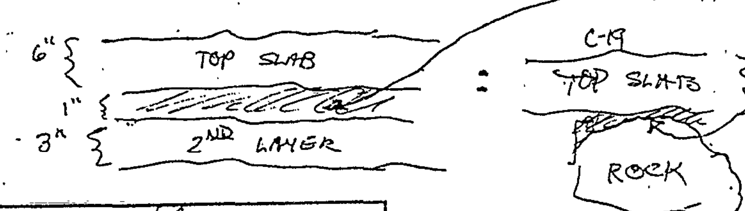
BLDG 14

Large Hallway





Instrument Model & s/n:	22221 / A
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.20 cpm / dpm based on Sr/Y90
Detector Area	15.5 cm2

REVIEW [signature]

HILBERT ASSOCIATES, INC.

DIRECT SURFACE MEASUREMENT ANALYSIS REPORT
(scaler measurement)

SURVEY # 648
C. HALLAM / C. Hallam
SAMPLE DATE: 8-13-97
LOCATION: B14 LARGE HALL
GAS CYLINDER TEST PIT
SAMPLE SURVEY OF PIT BOTTOM
CH ~~WHERE~~ BLACK SOIL & SLUDGE/GREASE
8-14-97

RADIATION MEASUREMENT: Beta-Gamma
RESULTS REPORTED UNITS: dpm per 100cm2
MEASUREMENT TYPE: direct scalor measurements

TOTAL BACKGROUND COUNTS	50
BACKGROUND COUNT TIME (MIN)	1
SAMPLE COUNT TIME (MIN)	1

SAMPLE #	LOCATION CODE	LOCATION DESCRIPTION	GROSS SAMPLE COUNTS
1	B7	SOIL MIXED WITH SOME	547
2		BLACK GREASE FROM (95% SOIL) 8-14-97	
3		6"-12" ABOVE PIT FLOOR (95% SOIL)	
4	B7	GREASE WITH SMALL AMOUNT	5082
5		OF SOIL (90% GREASE) FROM	
6		0 - 4" ABOVE PIT FLOOR	
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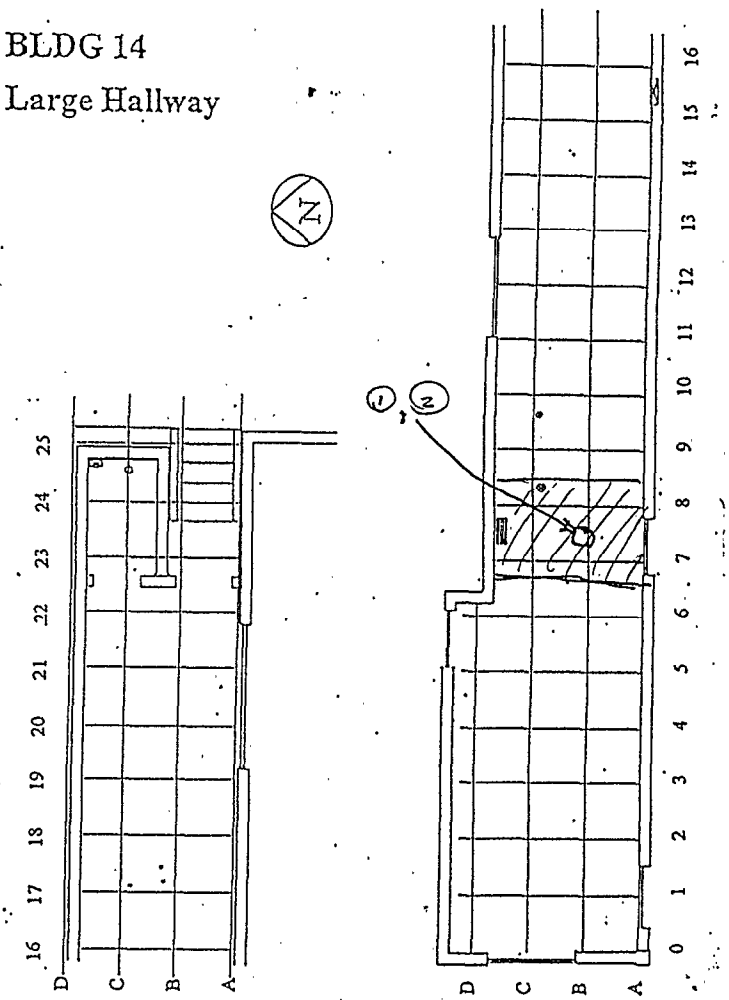
BLDG 14
Large Hallway



Instrument Model & s/n:	L2221 / C
Detector Model & s/n:	
Calibration Date:	
Efficiency	0.20 cpm / dpm based on S/Y90
Detector Area	15.5 cm2

REVIEW

ENCL-C2.XLS

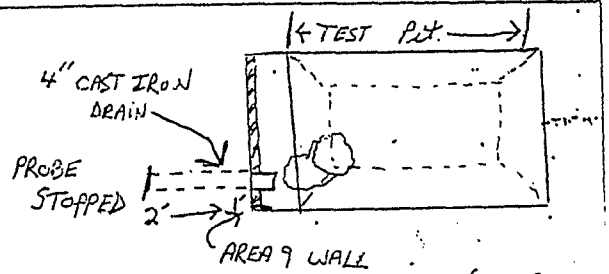
HILBERT ASSOCIATES INC
RADIOLOGICAL ENGINEERS

IDM Environmental
Bldg. 14, Praxair Site
Tonawanda, NY 14151

Radiological Survey Form

Hilbert Associates, Inc
Radiological Consultants
640 Maple Ave
Saratoga Springs, NY 12866
Phone: 518-584-0166
Fax: 518-584-8529
Contract # 95012

Date / Time 9-11-97 @ 2240 / Tech M. Zigo	Instruments / sn Ludlum 2221 "B" #186358 / Ludlum-177 #4676
Location / Purpose Large Hall / TEST Pit Drain Survey	Survey # 747 / RWP # N/A

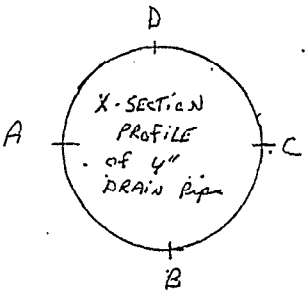


4" DRAIN Pipe is 57" (DEEP) FROM Large Hall Floor

Direct Probe Survey
"INSIDE" 4" PIPE of CYL.
TEST Pit.

0-1'
- A. 19,900 D.P.M./100 CM² BY
- B. 12900 D.P.M./100 CM² BY
- C. 25,800 D.P.M/100CM² BY
- D. 6,450 D.P.M./100CM² BY

1'-2'
- A. 6,450 D.P.M./100CM² BY
- B. 8060 D.P.M./100 CM² BY
- C. 8060 D.P.M/100 CM² BY
- D. 5,480 D.P.M./100 CM² BY.



The Letters Denote Probe Locations INside & outside of 4" Drain.

Direct Probe Survey "outside" of Pipe.

0-6"
- A. 4,837 DPM/100 CM² B.Y.
- B. 4,837 DPM/100 CM² B.Y.
- C. 5,805 D.P.M./100 CM² B.Y.
- D. 3,225 DPM/100 CM² B.Y.

Loc	Type	Description	Gross	Δ DPM	Gross	Beta DPM
1	S	Outside of Pipe	—	—	70	700
1	S	INSIDE of Pipe	—	—	1800	8750

Loc	Type	Description	Gross	Δ DPM	Gross	Beta DP
		N				
		A				

Comments: S = Scrape (dpm/100cm²)

Scaler S/N Ludlum 2221 "B"		BKD	EFF	MDA
CT = 1	Alpha:	N/A	N/A	N/A
Tech M. Zigo	Beta:	80	20	177

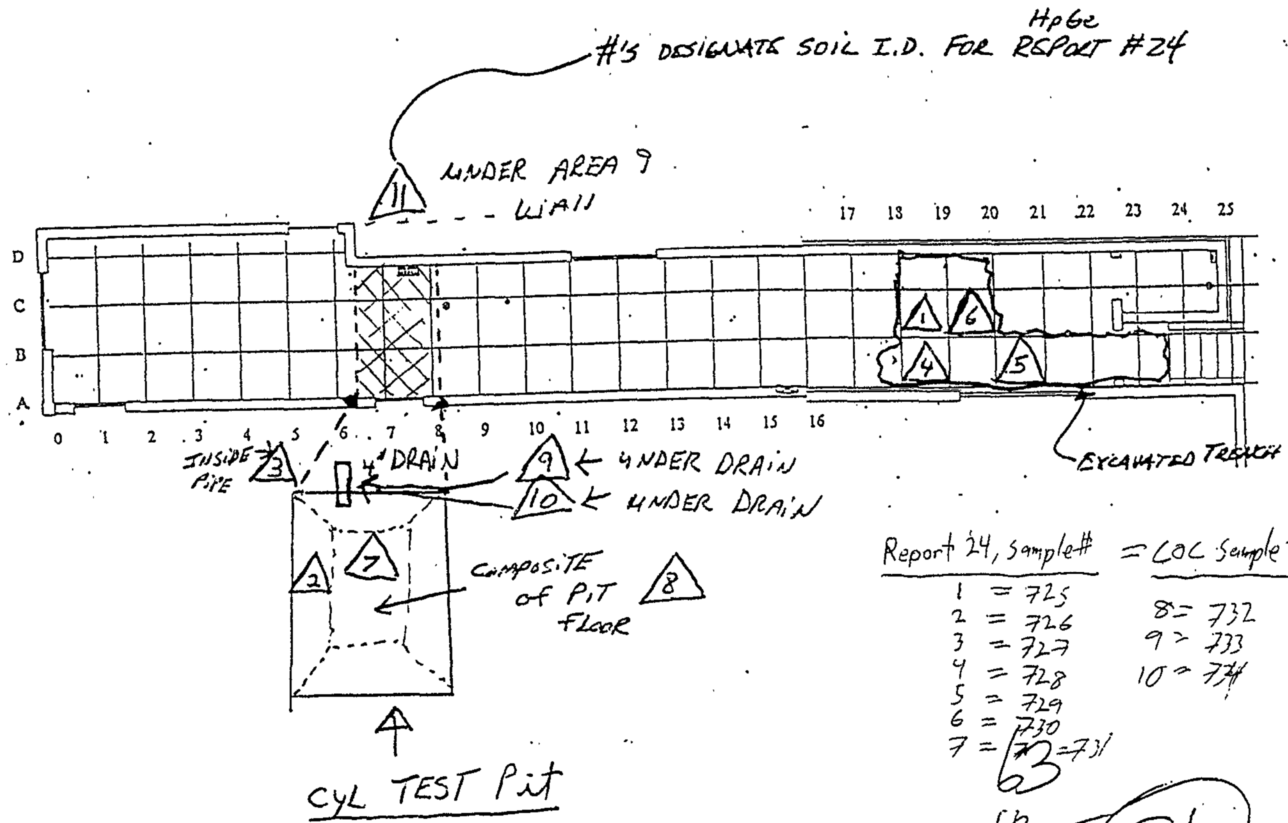
Review

ION TECHNOLOGY, INC.
640 Maple Ave
Saratoga Springs, NY
(518) 584-0166

RADIOLOGICAL SURVEY

Project: Crafain
Area: BLD-14

Date/Time 9-12-97 @ 0130	Tech M. 3lgo	Instrument / sn N/A	
Location/ Purpose SOIL HpGe GRID LOCATION FOR REPORT #24		Survey # 758	RWP# 01
LARGE HALLWAY – Cyl tst Pit + TRENCHES			



Report 24, sample#	= COC Sample #
1	= 725
2	= 726
3	= 727
4	= 728
5	= 729
6	= 730
7	= 731
8	= 732
9	= 733
10	= 734

63
Cb 71 81

Loc	Type	Description	Gross	α dpm	Gross	β dpm	Loc	Type	Description	Gross	α dpm	Gross	β dpm
		N/A							N/A				

Type:s = smearable, dp = direct probe

Scalar S/N N/A	BKD	EFF	MDA
CT= DATE	α:		
Tech	β:		

Comments: △ - Denotes SAMPLE LOCATION

Review: [signature]

Encl 3.3 to HSP 210